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The N. R. A. Members' Meeting

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The AMERICAN RIFLEMAN

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The 1925 Meeting of the Members of the National Rifle Association of America

THE annual meeting of the National Rifle Association of America took place in the Club House, Camp Perry, Ohio, Thursday, September 10, 1925. In accordance with the by-laws of the Association which have been in effect for many years only Life Members attended and voted. Practically all of the Life Members in attendance at Perry were present and the meeting was one of the largest and most harmonious in the history of the NRA.

The meeting opened with the First Vice President, F. C. Ainsworth in the chair, Senator F. E. Warren, the President, being unable to attend.

The reports of the Acting Secretary and the Treasurer showed that the Association is on a firm financial basis and that the membership has increased materially during the past year, particularly during the past few months. There are at present over 20,000 annual members enrolled for this year. There has also been an unprecedented increase in the life membership. The affiliated clubs showed a remarkable growth with an exceptionally low mortality rate.

The President's report was of such vital importance that it is printed herewith in full:—

Gentlemen:—

The reports of the Secretary and Treasurer, to which you have just listened, show the increasing growth and the firm stability of the Association. However, in spite of the steady growth which has taken place during the past few years, it has been evident for some time that there were many administrative matters which required a different method of handling, and that great improvements were possible in the executive office.

At the last regular Director's meeting, held in February, several changes were made in the personnel of the Executive Committee with a view to effecting such changes and improvements. The new Executive Committee at once proceeded to a thorough survey of the Association's affairs. It soon became evident that a change in the Secretary was required before any great improvement could be effected, and a meeting of the Board was held in June, at which time the former Secretary was removed.

Since that time the business affairs of the Association have been systematized, the office force has been brought to a much higher standard of efficiency, and, while the time has been short for the effects to be visible, nevertheless it is hoped that the change for the better is already appreciated, and I am satisfied that it soon will be so plain that it can not be overlooked. We are trying, to the best of our ability, to run the National Rifle Association on a straight business basis, as should be done in a corporation which handles about a hundred thousand dollars a year of funds.

Many plans are under consideration for the ensuing year, all directed to the single point of giving greater service to the shooter and carrying out the prime object of the Association, that of encouraging the growth of rifle shooting.

Many details of policy and management have been considered and disposed of by the Board or the Executive Committee, and these are taken up in due course as they arise. However, one matter has come up which requires the action of this meeting, and to that I will now invite your special attention.

In investigating the affairs of the Association, it was brought to the attention of the Executive Committee that, by reason of a series of amendments to the by-laws made at various times, the composition of the Board of Directors had varied widely from that permitted by the law under which the Association is organized. The Committee has consulted counsel in this matter and is advised that a large proportion of our Directors are not legally selected and that, unless this meeting shall take steps to rectify the situation, it will be the duty of the presiding officer at the next Directors' meeting to recognize only the relatively small number who are legally qualified. This would result in the disqualification of a large number of active and useful directors, and it is my hope that this meeting may take the proper steps to avoid any such contingency. I have consulted several other counsel familiar with corporate law and they all agree emphatically with the view of the counsel retained by the Executive Committee.

I have, therefore, directed competent counsel who are members of the Board to prepare the necessary amendments to the by-laws for your consideration and the details of the legal situation will be explained to you in connection with the amendments. Since these apparently necessary changes must be made before the election of directors, I will immediately recognize Mr. Wiles, whom I have asked to present this matter to you in detail.

Mr. Wiles then explained that, under the corporation laws of New York under which the Association is organized, the Directors must be elected from the members by the members, the intent being to vest in the members the absolute control of the affairs of the Association and to vest the control of the corporation only in Directors chosen by the members. However, in spite of this universal rule of corporation law, by several amendments passed in previous years by the Board of Directors there have been added to the Board a very large number of additional Directors who have been acting without any legal right.

The legally constituted Directors elected by the members number but thirty-six. The illegally chosen Directors include five named by the Secretaries of War and Navy, forty-eight named by the several State Rifle Associations,

twenty Honorary Directors for Life chosen by the Board of Directors in past years and given the right to vote by previous presiding officers, and finally forty-eight Adjutants General from the several states. Thus the legally chosen Directors are far fewer than the illegally named ones, namely thirty-six to one hundred twenty-one.

Among the numerous improperly selected Directors, however, there are a very large number of effective and highly useful men who it will be unanimously agreed should be on the Board. Unfortunately, therefore if nothing were done by this meeting, it would be necessary for the presiding officer to recognize only the proper Directors at the next meeting of the Board, and this would result in the disqualification of these active and valuable men, and result also in a Board action which is not truly representative of the membership.

The change proposed therefore, was not to remove anyone from the Board who had ever been a member of it, or who could be permitted to act by any future presiding officer, but to legalize as many as possible of these useful and valuable men who have been acting on the Board in good faith in the past. It was recognized that many of the Adjutants General have been most useful and valuable, and that as many of them as are eligible should be on the Board.

The following resolution was moved for adoption:—

Be it resolved, That the By-Laws of the National Rifle Association of America be amended as follows:

Article 4, Section 2, Page 3 of the printed copy bearing date of February 11, 1925, to be amended to read as follows:

"2. The Board of Directors of the National Rifle Association of America shall be composed of sixty Life Members of the Association, who shall serve for a term of three years commencing on the First of January of the year first succeeding the year in which they are elected. The Board of Directors shall be divided into three classes of twenty, and one class of twenty shall be elected at each Annual Meeting of the Association."

Article 4, Section 5, under Officers, Election and Duty Of, on Page 4 of the printed copy dated February 11, 1925, is hereby amended to read as follows:

"5. The Board of Directors of the Association may elect as an Honorary Vice President any person to whom they consider the Association to be under special obligation, and such person shall be supplied with a special badge at the expense of the Association, but such Honorary Vice Presidents shall have no right to vote or attend meetings of the Board of Directors except insofar as they may be otherwise qualified so to do."

Mr. Loos then moved an amendment providing in substance that the proposed Board of sixty be further enlarged by an additional class of fifty-four Directors who should be elected each year from among the Adjutants General and the nominees of the War and Navy Departments, the idea being to elect all the Adjutants General each year whether or not they were members of the Association and eligible to election, giving them an opportunity later to qualify if they so desired. Mr. Loos in effect admitted that this method of retaining the services of the Adjutants General would be an evasion of the law under which the Association is incorporated but was of the opinion that it was necessary in order to prevent the possibility of giving offense to the Adjutants General.

Such of the Adjutants General present as were members of the Association were called on to speak on the amendment and they were unanimously in favor of constituting at this time a legal Board and leaving to that Board the settlement of such questions, and they opposed the amendment of Mr. Loos. The amendment was then laid on the table with but two dissenting votes. The original amendment was then unanimously adopted.

The meeting then proceeded to the election of the Directors to fill the vacancies created by the expiration of the terms of the retiring Directors, the resignation of two Directors and the twenty-four vacancies created by the amendment just adopted. The new members of the Board of Directors are as follows:—

NEW DIRECTORS—TERMS EXPIRE 1926

Mr. Stuart Scott, New York; Major Harry L. Smith, U.S.M.C.; Colonel C. E. Stodter, U. S. Cavalry; Mr. Don A. Pruessner, Iowa; Captain Wallace Darling, Mass. N. G.; Captain W. G. Layman, U. S. Infantry; Mr. J. K. Jensen, New York.

NEW DIRECTORS—TERMS EXPIRE 1927

Comdr. W. A. Lee, U. S. Navy; Lieut. Col. A. B Critchfield, Ohio; Lieut. Col. C. C. Stanchfield, Mass. N. G.; Mr. Karl T. Frederick, New York; Major J. B. Van Sciver, Del. N. G.; Major Ralph Keyser, Insp. Target Practice U.S.M.C.; Brig. Gen. L. A. Toombs, Louisiana, N.G.; Major H. H. Kerr, Ohio N. G.; Lieut. Colonel Chas. W. Harris, Arizona N. G.; Brig. General J. Clifford R. Foster, Florida N. G.

NEW DIRECTORS—TERMS EXPIRE 1928

Colonel A. J. Macnab, U. S. Infantry; Colonel Fred M. Waterbury, N.Y.N.G.; Mr. Russell Wiles, Illinois; Mr. T. G. Samworth, Delaware; Colonel George Kemp, Pa. N.G.; Captain Victor M. Hovis, Nebr. N. G.; Brig. Gen. Bird W. Spencer, N.J. N.G.; Mr. K. K. V. Casey, Delaware; Major General C. C. Williams, U. S. Ordnance; Brig. General M. A. Reckord, Maryland N. G.; Colonel A. A. Fraser, No. Dakota N.G.; Hon. F. E. Warren, Wyoming; Mr. E. C. Crossman, California; Brig. General C. E. Black, Ill. N.G.; Lieut. Col. G. C. Shaw, U. S. Infantry; Dr. C. E. McManes, Ohio; Hon. Benedict Crowell, Ohio; Captain E. C. Austin, Colorado; Mr. Ned. Cutting, California; Mr. R. V. Reynolds, Dist. of Columbia.

It will be noted from the above tabulation that civilians are taking a much more active part in the affairs of the Association and are receiving a corresponding representation on the Board.

The universal wish was expressed that, now that there is a legally constituted Board for the first time in many years, means can be found by which the Association can avail itself of the valuable services of the Adjutants General as a body.

Dr. McManes then offered the following resolution which was unanimously adopted:—

Be it resolved, by the National Rifle Association in its annual meeting, representing upwards of one hundred thousand members of its affiliated clubs, that the excise tax on sporting arms and ammunition is unfair, discriminatory and opposed to the best interests of our members and tends to impede the development of a citizenry trained in the use of arms and fit for military service.

Be it further resolved, That the National Rifle Association respectfully petitions Congress to remove this tax.

All Directors of the National Rifle Association

Recapitulation—Army, 11; Navy, 3; Marine Corps, 4; Civilian, 19; National Guard, 23

DIRECTORS—TERMS END 1926

Major L. W. T. Waller, Jr., U.S.M.C., Res.
Com. C. T. Osburn, U.S.N.
Mr. Karl D. Loos, Washington, D. C.
Lt. Col. David M. Flynn, N. J. N. G.
Maj. Gen. F. C. Ainsworth, U.S.A., Ret.
Captain G. L. Wotkyns, Ord. Dept., U.S.A.
Major C. H. Wilson, Fla. N. G.
Major Julian S. Hatcher, Ord. Dept., U. S. A.
Major Fred M. West, Ore. N. G.
Mr. James E. Murray, N. Y.
Mr. H. L. Day, Wallace, Idaho.
Mr. Stuart Scott, New York.
Major Harry L. Smith, U.S.M.C.
Colonel C. E. Stodter, U. S. Cav.
Mr. Don A. Pruessner, Iowa.
Captain Wallace Darling, Mass. N. G.
Captain W. G. Layman, U. S. Infantry.
Major J. K. Boles, F. A., U.S.A.
Mr. J. K. Jensen, New York.
Major Harold Wirgman, U.S.M.C.

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Mr. L. M. Rumsey, Jr., Missouri.
Major Basil Middleton, Ind. N.G.
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Major Nathaniel C. Nash, Mass. N.G.
Comdr. E. E. Wilson, U.S.N.
Major W. B. Randall, La. N.G.
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Lieut. Col. A. B. Critchfield, Ohio N. G.
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Mr. Karl T. Frederick, New York
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Major Ralph Keyser, U.S.M.C.
Brig. Gen. L. A. Toombs, La. N. G.
Major H. H. Kerr, Ohio N. G.
Lieut. Col. Chas. W. Harris, Ariz. N. G.
Brig. Gen. J. Clifford R. Foster, Fla. N. G.

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Captain Victor M. Hovis, Nebr. N. G.
Brig. Gen. Bird W. Spencer, N. J. N. G.
Mr. K. K. V. Casey, Delaware.
Mr. E. C. Crossman, California.
Maj. Gen. C. C. Williams, Ord. Dept.
Brig. Gen. M. A. Reckord, Md. N. G.
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Lieut. Col. G. C. Shaw, U. S. Inf.
Dr. C. E. McManes, Ohio.
Hon. Benedict Crowell, Ohio.
Captain E. C. Austin, Colo. N. G.
Mr. Ned Cutting, California.
Mr. R. V. Reynolds, Dist. of Columbia.

More About Game Bullets

By J. V. K. Wagar

IT SEEMS that we now have two rival camps of riflemen who are politely calling each other all manner of liars because of their differing beliefs concerning the types of bullets which are really the best killers. The first of these camps is enthusiastically in favor of the high-velocity, small-bore loads in which the bullets may or may not be of high sectional density. The second camp believes the best killing bullet to be a big chunk of lead, of larger caliber and with good sectional density, flying at low velocities. Being an armed neutral myself, subscribing to the views of both camps, using the favorite cartridges of both outfits, and differing emphatically with them both at times. I will at least get myself in bad by writing this.

High velocity is, by itself, an excellent killer. Tigers have been instantly killed by the vicious, but little, 70-grain, .22 Hi-Power bullet; and the .22 Hi-Power bullet is one of the smallest, in caliber and weight, that we find practical for cartridges with such velocities. The bullet so seldom hangs completely together in heavy tissue that the bullet expansion and penetration are difficult to ascertain. The bullet quite often, although not always, divides itself into several fragments and these fragments, flying at terrific speeds, impart the effect of high velocity upon the tissues of an animal. It is, then, really the high velocity of such a bullet that kills, for the .22 H. P. bullet has less weight and diameter than that of the .25-20, than which it is a much better killer.

The killing effect of high-velocity bullets has been explained in a great number of ways. Some have had it that the column of air following the bullet is responsible for the blasting of flesh, but this theory is hardly probable or else those among us who have been grazed by high-velocity bullets would have been blown to bits, and thin-paper targets, instead of being only punctured by a bullet, would be blown in two by the terrific blast following that bullet. There are many ways to disprove this theory but the most certain truth about it is that nowhere on earth is air pressure so great that, in filling even an absolute vacuum of a size made by a rifle bullet, if such a vacuum is possible, no great force could be exerted.

Some have presented the theory that the energy of a bullet is changed to steam, upon striking an aqueous solution, and that the steam does the work This again seems improbable or else a small animal, struck with a sizable high-speed bullet, would at least be partially cooked, in addition to being at least partially cleaned, and would require but little labor to make it ready for the table. Besides, I was once struck with a good-sized slug and didn't feel at all stewed. But, all joking aside, the steam theory does demand more proof than it now has.

A very large dish pan and several cans full of water were exposed to the air until they had reached the atmospheric temperature. Then the cans were suspended above the pan, one at a time, and bursted by shooting high-speed bullets into them. A part of the water dropped into the pan and its temperature was quickly taken and compared with its initial temperature. In every case there was an increase in temperature, but never a great one.

It is logical to surmise that any force which will turn a certain amount of water into steam will at least heat a larger amount of water. With this in mind, I started with large cans of water and worked down to such small cans that almost all of the water was vaporized. I have been, at various times, splashed by the water and vapor thrown from bullet-bursted cans but I have yet to be scalded. It is true that the water may have cooled slightly before striking me, but I would have been scalded even then had the water been hot enough to scald, for water will travel a good distance through the air before cooling much. If this is not believed, a teakettle full of boiling water, a step-ladder, and a friend to pour the water will aid much in proving it.

Although a rise in temperature was always noted, it was small in every instance; so small that I believe the vaporization to be due to the water particles being held apart by velocities given them by means of the disrupting action of the entering bullet rather than by the heat generated. This, of course, needs further experimentation to prove it, and of a sort possible only in the complete laboratory of a skilled physicist. It may be that I am entirely mistaken concerning the cause of vaporization, but these deductions are at least plausible.

Perhaps the best explanation of the killing power of high-speed bullets is in the fact that water is comparatively non-compressible. Water, in making room for a body entering it must either flow about that object or, lacking time to do that, must move violently to the sides, distorting or even bursting the walls of the vessel containing it. Move a canoe paddle very slowly through the water and the water flows easily around it, requiring little force on the part of the paddler and moving the canoe but little ahead. Use more force and the water has no time to flow about the paddle; more energy is required of the paddler; the canoe moves ahead. Strike the surface of the water a very hard blow with the flat of the paddle and the water has no time to flow aside. The paddle, because it is not of sufficient strength to part the water, is broken.

The greater the speed with which an object strikes water, the less opportunity the water has to flow about the object and the more it must split apart, bodily, to make way for the entering object. Also, the harder the water seems. Start diving into a pool of water from different heights and notice how the water seems harder and harder as one drops from a greater and greater distance, striking the water with greater speed with each addition to the length of the fall.

The flesh of any animal is made very largely of water and when pierced by a slowly moving bullet, the adjoining flesh can move slightly to one side without being greatly ruptured. A high-speed bullet, on the other hand, just as in water, affects a much greater area and usually, although not always, ruptures the animal badly causing death.

Some experts have claimed that bullets flying slower than a certain velocity, sometimes given as 2200 f.s., have no real rupturing effect. This may be very true, since a certain amount and speed of flesh displacement are needed to tear the walls of the cells constituting flesh, but the speed at which any bullet travels is sufficient to *displace* fluid matter, causing shock, if not rupture.

Let us consider shooting at a 12-inch carp lying in three inches of water, for instance. A .22 L. R. bullet can pass within an inch or two of the fish and disturb it so much that it will leave at once, causing the shooter to find a second 12-inch carp. A .32-20 will apparently daze the second fish for a moment or two but it will speedily recover and will then depart with all due haste. A .38-55 will stun the next fish to such an extent that it will recover only after three or four minutes. A .30-40 will stun a 12-inch carp so much that death will sometimes result, although a large fish, like a 37-inch carp I once used it on, will recover speedily. The bullet of a .250 Savage, a .30-'06 high-speed, or .280 Ross, passing within a few inches of a shallowly lying fish, will usually rupture the fish, causing instant death.

I experimented in this way with quite a number of carp, in a neighborhood where the game warden was kindly disposed to their removal, and proved, at least to my own satisfaction, that a bullet, any bullet, shocks flesh in proportion to the speed with which that bullet strikes, even though a certain velocity is needed to cause rupture. I also learned, in one deep pool with a bottom of smooth sand, from which I could easily recover my bullets, that pure water will expand most bullets beautifully, and that bullets of light weight and extremely great speed will, like the canoe paddle, be entirely disintegrated.

The peculiarly fatal shock obtained by the use of really high-velocity is so unique and, at times so efficient in the killing of all sorts of game that, for a time after their inception, high-speed bullets upset completely all of the time-established truths concerning projectiles. Many people whom I know regarded the .22

H. P. with a sort of awe and invested it with destructive qualities which could, and did, exist only in fancy. Of late, however, a certain amount of public opinion has become prejudiced against bullets having no other favorable qualities than high velocity, and not without reason.

For some unknown reason, high velocity does not always kill. In some instances its effects are even absolutely lacking. I remember a bull elk which was shot cross-wise through the chest with a .250 Savage soft-pointed bullet, the bullet passing through the heart. That elk ran two miles before it bled to death, and the wound, when opened to the vision, looked exactly as if a rapier had been thrust through the beast. Why? I do not know.

After cutting a lot of Colorado's jack rabbits almost completely in two with the regular service .30-'06 loads, at ranges up to 200 yards, I shot a couple of southern Michigan's cottontails with the same loads, and with the Western 150-grain open-point bullets at 2700 f.s., at very close ranges, and the bunnies looked as if they were killed with .22 C. B. caps. Why again? Search me.

Many hunters tell us of wonderfully clean kills with various high-speed bullets, and these experiences are worth believing, every word of them. And other hunters tell us of slapping moose in the face with 110 grains of lead at 3500 f.s., and of losing their game. I remember one grizzly that was spanked on his rudder end with a whole magazine full of .250-3000's and was hurt but little. Some hunters have found that the 150-grain .30-'06 bullet at 2900 or 3000 f. s. is good medicine for everything, and others have had them go to pieces before they penetrate sufficiently to do any real damage. Some men have claimed that the 180-grain .30-'06 bullet at 2700 f.s. is a better killer than the .405, and others have given it up in disgust.

Recently, in reply to the rather large amount of disapproval directed towards small caliber, high-velocity bullets, many hunters who have very successfully killed several deer with them have written of their experiences with such cartridges as the .22 H.P. and .250-3000. Such articles are truthful and interesting, and have proved that such ammunition is all that has ever been claimed for it. They do not, however, prove that such cartridges never fail. Other hunters, equally truthful in their accounts, have had them fail. Together, all of these men have proved one thing: High velocity is but one killing characteristic of bullets and when one pins his faith on just one characteristic, and that one not always reliable, he may some day be disappointed.

Almost every kind of big game this world can offer has been killed, neatly if you please, with heavy bullets having velocities but little higher than those with which our .22 L.R's are sped. The .45-70 and .45 Sharps bullets have no explosive effect that can be called such, but depend upon their large diameters and heavy weight, tearing a large hole completely through a beast, for their killing powers. For head and shoulder shots on the heaviest of the American game, these bullets have seldom been excelled. But deer have been shot through the viscera with them, then have run for miles, and their meat was never served on the table of the hunter.

It is indeed difficult to prove that any one bullet characteristic is a better killer than another characteristic. In shooting, there are too many contradictory happenings to prove any contention, except in hundreds of experiments. To prove, for instance, that one cartridge is infallibly a better deer load than another, one man should kill at least twenty-five deer with each cartridge. Short of that number, too many unusual things are likely to distort one's ideas. And how many men of to-day can shoot twenty-five deer with each of two cartridges, and within so short a time that some of the experiences are not dimmed by time?

Of the deer I have killed, the most thoroughly ruined specimen was broken-up with the .30-'06, using the 220-grain bullet at standard velocities. Yet it would provoke little else than sarcastic remarks if I were to say that this cartridge, well known for its lack of serious flesh-tearing, is the worst meat-spoiler of all deer loads.

The most thoroughly "exploded" animal I ever saw was a very large and ancient Thomas cat which was killed by my .40-90-370 Sharps Straight, a cartridge known for accuracy and for a fair amount of killing power, but having no unusual amount of shock, penetration, or hole-making properties. The evaporating effects of this particular shot made the .22 H. P., the .250-3000, the .256 Newton, and even .45 and .50 caliber explosive bullets, look like weaklings among the tribe of cartridges known for just such work. Yet everyone who reads this knows that it was just a freak shot.

The more one learns of bullets and their killing qualities, using many different kinds of them on many different kinds and sizes of animals, the surer one is that no man can, with great accuracy, foretell the effect of any one shot. Neither can any man evolve a theory concerning the killing actions of bullets which is, beyond every doubt, correct. Had we an animal possessing ninty-nine lives, capable of having each of those lives killed one after another, and with the gift of speech, we might be surer of our theories.

There are, however, certain facts which every experienced hunter knows. It is known that an increase in velocity always adds to the killing power of a bullet; penetrations, bullet area, and other things remaining equal. It is known that a bullet with great cross-sectional area is a better killer than one with a smaller area, no matter whether the greater cross-sectional area is that of the unfired bullet or the result of expansion; velocity, penetration, and other things remaining equal. An increase in penetration always adds to the killing power of a bullet, unless the animal is already completely pierced; velocity and bullet area remaining the same. Of bullets intended to pierce flesh point on, without key-holing or toppling, those with flat or bluntly rounded points through the greater part of their penetrations are the best killers; velocity, bullet area, and penetration remaining the same.

In the light of these four desirable characteristics, it is interesting to see how some of our most popular cartridges, typical of their classes, perform.

The .38-55-255 and .45-70-405, having very similar velocities and penetrations, vary in killing power almost in direct proportion to their cross-sectional areas. Although the .38-55 has a small, flat point and the .45-70 a bluntly rounded one, there is really no distinct difference in their general outlines. These two bullets depend upon their penetrations large initial and expanded areas, and blunt points for their killing powers. Upon soft game, or upon the softer portions of large game there is no great amount of expansion with these bullets, but on heavy tissues or bones they expand very well. Neither have sufficient velocities to give much of a shocking effect.

It is well worth noting that these two bullets, having practically no differences in penetration with soft-pointed or metal-cased bullets, which are well protected against distortion at the low velocities with which these bullets fly, have a great difference in penetration with solid, lead alloy bullets. The reason is that no slender bullet of a material proving to be easily distorted at the velocity with which it flies can penetrate as deeply as a thicker, heavier bullet, of greater mass.

In cartridges like the .250-3000 and the .30-'06, the latter with the 110-grain bullet at 3500 f.s., high velocity is really the most reliable killing property. On small game, or on the softer portions of larger game, they give excellent penetration and expansion. For paunch or brain shots, then, or for shooting medium or small-sized game in any part of the body, they are seldom equalled for killing with one shot. In such body shots, the shock of high velocity, combined with good penetration even with such light bullets, and usually excellent expansion, accounts for the popularity of these two cartridges for coyote, deer, and antelope shooting. Even when these bullets separate into several pieces, the particles meet so little resistance that they often go entirely through the animal. Although of small unfired diameters, their very high velocities will usually, although not always, open them out to a really efficient area and shape.

On very heavy animals, the high velocities of the .250-3000 and the .30-'06 Hi-Speed are still very effective, but the bullets have a tendency to go to pieces before the effects of high velocity are carried in as far as the vital organs. Because exteremely high velocity is inimical to great penetration with such light bullets, although it often occurs, penetration cannot be absolutely depended upon in these loads, but varies with the toughness of flesh pierced. The expansion of these bullets cannot be depended upon in every shot, although usually it is very good, for it varies from no expansion whatever to bullet disintegration, depending again upon the kind and part of an animal *(Concluded on page 19)*

The Evolution of Accuracy and Range

Part II—From Civil War (1860) to 1925

By Major G. P. Wilhelm

BEFORE continuing the discussion in detail of the evolution of accuracy and range it may be well to review in tabular form two of the figures included in Part I. Table I shows estimates of effective and extreme ranges from the beginning of history down to the present time. In so far as the writer knows, there has never been attempted before, an estimate of the range of the old types of weapons. This estimate may be erroneous, but it will be very difficult to prove the extent it is in error. It is at best a guess.

Table I
HISTORICAL TABLE

Showing Estimates of Effective and Extreme Ranges of the Principal Infantry Missile Weapons from Hannibal (3d Century B. C.) down to the Great War.

	Effective Range Yards	Extreme Range Yards
Sling, Europe, Asia, Africa 10th B. C. to 16th A. D.	40	200
Short Bow, Europe, Asia, Africa 5th B. C. to 19th A. D.	125	250
Cross Bow, Europe, Asia, Africa 12th to 19th Century	200	350
Long Bow, England 12th to 16th Century	250	400
Turkish Bow, 15th to 18th Century	300	800
Hand Gun, Europe, 14th Century	25	300
Match Lock, Europe 15th Century	50	500
Arquebus, Europe 16th Century	60	800
Wheel Lock, Europe 16th Century	60	800
Flint Lock, Europe and America 17th and 18th Centuries	75	1100
Percussion Musket, England 1840	100	1200
American Revolutionary Rifle U. S. A. 18th Century	300	1400
Prussian Needle Gun, Franco-Prussian War	800	2000
Springfield, Cal. .45, U.S.A., M. 1873 Spanish American War	1500	2800
Krag, U.S.A., Caliber .30, M. 1898, Spanish American War	2500	3300
U. S. Service, Caliber .30, M. 1906 World War	2800	3500
British, Mark VII World War	2700	3600
French, 1898 World War	3700	4500
German Long Range World War	4300	5100
U. S. New Service, Caliber .30, M. 1925	5000	6000

NOTE:—The effective range is considered to be that range at which an effective collective fire could probably be delivered considering the tactics and technique of fire for that period in history and also considering the probable disabling effect of the missile or bullet. Thus is considered the probability of hitting and also the shocking power of the missile.

The extreme range is considered the maximum range obtained by the average weapon of a given period under average conditions.

The effective range of the bow was long because the flight of the arrow could be observed. The effective range of modern weapons is long because of the use of machine guns.

In giving reasons for the ranges selected, an entire book could be written in defense. Space, however, permits of a discussion of only two of the most striking points.

It will be noted that the effective range of the long bow and the Turkish bow is given comparatively much longer in proportion to the extreme range than are the first guns. It will also be noted that with all the modern weapons, the same thing is true. The reason for this, in the case of the bow, is that the flight of the arrow in the air could be observed. Likewise, in all modern weapons, the use of a machine gun with its observed fire, made possible the present length of effective range. Because of the lack of observation of fire the Revolutionary rifle was given no greater effective range than the Turkish bow. The rate of fire of the Revolutionary rifle was very slow compared to the bow.

It may also be noted that the British Mark VII bullet, which was used in the World War, was given credit for a little more extreme range than our own Model 1906 bullet. On the other hand, its effective range was given as less. This may seem illogical, as the British bullet was the heavier. The reason for this, however, was because in the ballistic firing from machine guns in this country, the Model 1906 gave the least dispersion at the longer ranges.

Table II shows estimates of the increase in accuracy of military rifles and ammunition from the time that the rifle came into general military use in armies. The fact that this table is given in fractions of an inch for some measurements should not be allowed to mislead the reader. The figures were not obtained by actual firing, except in a general way. Even if such figures were available they would not mean so much as they would be misleading, due to the inevitably different conditions under which such tests would necessarily be held. I can, however, quote tests that will show, in some cases, that these figures are much too small, and I can also show groups for each decade that are better than any shown in the table. For instance, if anyone who has a 1925 National Match rifle and ammunition thinks he can shoot groups of about one inch in diameter at 100 yards, or 16.5 inch groups at 1,000 yards, let him try it. It can be done but not often. The same is true of all the other figures. They are meant to represent the best. However, in some cases, some latitude has been exercised. For instance, the 1855 musket is credited with doing a little better than the figures I show for 1860.

In the United States the Model 1855 rifled musket, which was known as the Springfield 1855, was the first American regulation arm entirely designed as a rifle at a caliber of .58, which was experimentally obtained by converting musket barrels. It had 3 grooves and was supposed to be accurate enough to hit a mounted man at 600 yards. Its penetration at 1,000 yards was said to be 4 in. of soft pine. Its accuracy was such that it was supposed to be able to put 10 shots on a 4 in. circle at 100 yards; 9 in. circle at 200 yards; 18½ in. circle at 400 yards; and 27 in. circle at 500 yards.

Table II
HISTORICAL TABLE

Showing Estimated Increase in Accuracy of Selected Military Rifles and Ammunition

Dates and Group Measurements (inches)

	1840		1860		1880		1900		1920		1925	
Range Yards	Mean Radius	Group Diameter	Mean Radius	Group Diameter	Mean Radius	Group Diameter	Mean Radius	Group Diameter	Mean Radius	Group Diameter	Mean Radius	Group Diameter
100	6.3	18.9	2.1	6.3	1.12	3.36	.84	2.52	.63	1.83	.35	1.05
200	12.6	38.7	4.2	11.29	2.24	6.90	1.68	5.18	1.26	3.87	.70	2.16
300	19.8	62.2	6.6	20.7	3.5	11	2.64	8.28	1.98	6.22	1.10	3.46
400	27	86	9	28.6	4.8	15.25	3.6	11.45	2.7	8.58	1.50	4.77
500	35	113	11.7	37.8	6.25	20.2	4.7	14.45	3.5	11.3	1.95	6.3
600	44	143	14.7	47.8	7.84	25.5	5.89	19.1	4.4	14.3	2.45	7.96
700	54	177	18	58.9	9.6	31.4	7.2	23.6	5.4	17.7	3	9.8
800	65	213	21.6	70.8	11.5	37.7	8.63	28.3	6.48	21.3	3.60	11.8
900	76.5	253	25.5	84.0	13.6	44	10.2	33.6	7.65	25.3	4.22	13.8
1000	90	296	30	98.7	16	52.6	12	39.5	9	29.6	5	16.5

Based on probable size of very best groups of ten shots fired under test conditions, an expert rifleman using average rifles and ammunition would probably double the size of these groups.

Table III

Table Showing Diminution in Caliber of Military Rifles

Year				
1850	England used the 11-bore "Brown Bess" of	.750	in. or	19.2 mm
1850	England made 20,000 14-bore "Brown Bess" of	.693	in. or	17.85 mm.
1852	England adopted the 25-bore "Enfield" of	.577	in. or	14.8 mm
1854	Austria adopted the 28-bore rifle of	.550	in. or	13.8 mm.
1860	Sweden adopted the 40-bore rifle of	.488	in. or	12.6 mm.
1866	France adopted the 59-bore rifle of	.433	in. or	11.0 mm.
1867	Austria adopted the 62-bore rifle of	.420	in. or	10.7 mm.
1869	Switzerland adopted 75-bore rifle of	.400	in. or	10.4 mm.
1871	Germany adopted the 58-bore rifle of	.433	in. or	11.0 mm.
1871	England adopted the 51-bore rifle of	.450	in. or	11.43 mm.
1871	Spain and Holland adopted 58-bore rifle of	.433	in. or	11.0 mm.
1874	France adopted the 58-bore rifle of	.433	in. or	11.0 mm.
1878	Sweden adopted the 76-bore rifle of	.396	in. or	10.15 mm.
1880	Servia adopted the 76-bore rifle of	.396	in. or	10.15 mm.
1886	France and Portugal adopted the 145-bore rifle of	.315	in. or	8.0 mm.
1887	Turkey adopted the 150-bore rifle of	.350	in. or	9.5 mm.
1887	England made the "Enfield-Martini" of	.400	in. or	10.25 mm.
1888	Germany adopted the 156-bore rifle of	.311	in. or	7.9 mm.
1888	Austria adopted the 150-bore rifle of	.315	in. or	8.0 mm.
1889	England adopted the 173-bore rifle of	.303	in. or	7.7 mm.
1889	Belgium adopted the 172-bore rifle of	.301	in. or	7.65 mm.
1889	Denmark adopted the 150-bore rifle of	.315	in. or	8.0 mm.
1889	Switzerland adopted	.295	in. or	7.5 mm.
1891	Italy adopted	.256	in. or	6.5 mm.
1891	Russia adopted	.300	in. or	7.62 mm.
1892	Spain adopted	.276	in. or	7.0 mm.
1892	Holland and Roumania adopted	.256	in. or	6.5 mm.
1893	The United States of America adopted	.300	in. or	7.62 mm.
1895	The United States of America (Navy) adopted	.236	in. or	5.87 mm.
1893	Roumania adopted	.256	in. or	6.5 mm.
1893	Spain adopted	.275	in. or	6.98 mm.
1894	Norway adopted	.256	in. or	6.5 mm.
1895	Chile adopted	.275	in. or	6.98 mm.
1895	Holland adopted	.256	in. or	6.5 mm.
1896	Sweden adopted	.256	in. or	6.5 mm.
1899	Servia adopted	.275	in. or	6.98 mm.
1904	Portugal adopted	.256	in. or	6.5 mm.
1908	Uraguay adopted	.275	in. or	6.98 mm.
1911	Brazil adopted	.275	in. or	6.98 mm.

In Great Britain in 1865, the Rigby rifle established a new world's record with a mean radius for 20 shots at 1,000 yards of 1.11 feet.

The old Snyder rifle with the Enfield barrel had a trajectory at 500 yards with a maximum ordinate of 11 feet. It was accurate up to 800 yards, although the bullet fell 12 in. in the first 100 yards, and 52 in. in the first 200 yards. The Martini-Henry was accurate up to a range of 1200 yards. It had a mean radius for 20 shots at 500 yards of .95 feet. Its maximum ordinate at 500 yards was 8 feet 2 inches.

By 1880 the best match rifles were supposed to be able to obtain an occasional target with a mean radius for 10 shots at 1,000 yards of slightly over a foot.

From the historical table showing accuracy, Table II, it is seen that the best accuracy that could be expected of military rifles in the time of the Civil War was 10 shots in a theoretical 5 foot bull's-eye at 1,000 yards, and that is giving them all the benefit of the doubt. Actually, however, it should be remembered that the extreme shots in a group which has a mean radius of 2½ feet is over three times this figure, or about 8 feet, so that the circle to contain all the shots must be around 8 feet in diameter. The use of heavy target rifles about the size of a small cannon, and having its weight supported by a strong bench, could undoubtedly do much better than this, but the tale told by Charles Winthrop Sawyer's story in "Our Rifles," one of his very interesting series of books on "Firearms in American History," in which a battle was won by a calculated shot at the Commanding General of an enemy army, which had a range of one mile and 187 feet, is incredible.

The best of the 1925 National Match ammunition has made groups at 300 yards as small as 2 in.; at 600 yards, 4 in.; and at 1,000 yards, all 10 shots have been inside of a circle with a diameter of 6 in. This same ammunition fired from the Mann rest at ranges around 5,000 yards has a horizontal dispersion laterally of only a few feet, and even the length from the shortest shot to the longest shot in a group of 10 is only a few yards; yet with all the present day knowledge of the effect of atmospheric conditions with wind instruments for giving the velocity and direction of the wind every 100 yards, with selected weather and with the use of the Mann rest and a heavy Mann barrel, it is not possible to put the first shot at 1,800 yards on a target the size of a man.

Many of the readers of this article will remember the old 5c weekly in the series called, "Work and Win," when the celebrated Fred Fearnot used to demonstrate before the Kaiser of Germany in the presence of the German Army, that with an American rifle he could always hit a man sized target at one mile. In the movies equally astonishing feats are daily performed, but not in real life.

During the earlier portion of the experiments which led up to the present perfection in the United States of the 1925 International, Palma and National Match types of stream line bullets, a penetration test was held at a range of 2,400 yards. The penetration butt was approximately 2 feet square, which at that range, of course, was invisible. With the use of a machine gun the fire was ranged on the target by observing the splashes of the bullets on water, the butt being located on water. In this way the center of impact could be placed upon the butt, and a certain percentage of hits be secured, usually about one shot in 10. If, however, the fire was opened without observation, or even if the fire was resumed after a short intermission without observation, the center of impact would sometimes be 100 yards over or short of the target. To hit a small target at 1800 yards is impossible without such observation of fire.

During the decade 1870 to 1880, the accuracy and range of military rifles had so increased that decisive results were being obtained in battle at the longer ranges. This was particularly shown by the American made Peabody-Martini in the hands of the Turkish troops in the Russo-Turkish War of 1877. This weapon was a breechloading rifle and was sometimes called in Europe "The Martini-Henry." It is unique inasmuch as an American company furnished the Turkish Government six hundred thousand rifles by contract, the weapons to be interchangeable.

"General Todleben, in a letter to General Brialmount, states that the number of Turkish bullets which fell among the Russian ranks when they were still 2,000 yards away from the defenders' position was such that divisions which at the outset numbered from 10,000 to 12,000 men were speedily reduced to a strength of from 4,000 to 5,000; that, in other words, they lost their effectives. Captain Kouropatkine, speaking of the attack upon Loftcha, states that, at 2,000 yards from the Turkish position, Russian soldiers were struck down by defenders' bullets, and that, at 1,500 yards, men were falling rapidly on all sides; and General Zeddeler, who was present with the Russian Guard when it received its 'baptism of fire' at Gorni Dubniak, states that, at 3,000 paces from the defenders' position, the Russians began to suffer loss; that at 2,000 paces, men were falling rapidly, and, as the attack progressed, the reserves suffered nearly as much as the firing line."

A London *Times* correspondent at Russian headquarters says:

"The American rifles used by the Turks have a tremendous range; I have seen dug out of a hard clay bank bullets which had penetrated sixteen inches after traversing a distance of over 2,000 yards.

"This skirmish proved, as every recent engagement has shown, the incontestable superiority of the Turkish over the Russian soldier, and also the vastly superior shooting power of the Peabody-Martini rifle over that carried by the Russian troops. At 350 yards the Russian rifle ceases to be deadly, while the Peabody-Martini at that range inflicts tremendous loss. The Turks thoroughly appreciate the superiority of the American weapon which they carry, and being naturally excellent marksmen they pour a tremendous fire upon the enemy before he is within his own firing distance."—*New York Herald, 1877.—American Breech-Loading Small Arms. (Charles B. Horton.)*

It will not be necessary to show the great ranging powers of the modern rifles and machine guns in the Spanish-American, the Boer War, the Russo-Japanese War and the World War. In the latter war the machine gun came into its own and machine gun barrages were sometimes effectively laid at ranges as great as 4,000 yards with such long range bullets as the French Balle D and the later German bullets for machine gun use. As a general thing the rifle in the World War was not used at ranges as great as in some of the earlier wars; for instance, the Boer War. The reason for this is not hard to find, as the World War was a trench affair. The climate was not adapted to long range visibility, and then too the machine gun made long range rifle fire unnecessary. Except for sniping, firing was usually at the shortest ranges.

In connection with Table II, it may be of interest to study Table III, which shows the decrease in the caliber of the rifles, at the same time the accuracy was increasing and the range was increasing.

The present service ammunition was adopted in 1906, so that it has had a reign of about twenty years, with the prospect that it will continue to be the standard ammunition of the Army for several years longer, due to the fact that there remain on hand large stocks of war time manufacture.

For the first two or three years after this ammunition was adopted it had not reached its greatest accuracy in quantity production. By 1910, however, several of the commercial companies and Frankford Arsenal were turning out this type of ammunition which was the equal, if not superior, in accuracy of the service ammunition of any other nation.

During the World War it was necessary to manufacture service ammunition in huge quantities. In fact the United States manufactured more small arms ammunition in less time than any other nation at war. One commercial concern alone, at the peak of its production in the latter part of the war, was probably manufacturing as much small arms ammunition as the whole of France. Naturally, such huge production required specifications for accuracy which allowed considerably more latitude than was considered desirable in peace time. The accuracy of the war time specifications for service ammunition is graphically shown in Figure I.

Figure I is made up as follows:

The upper horizontal row of black circles represents the standard 20 in. bull's-eye at 600 yards.

The black circles in the lower horizontal row represent the standard 36 in. bull's-eye at 1,000 yards.

The white circles in each row are circles which have a radius equal to the mean radius of each ammunition represented. Theoretically then the circle which has a radius equal

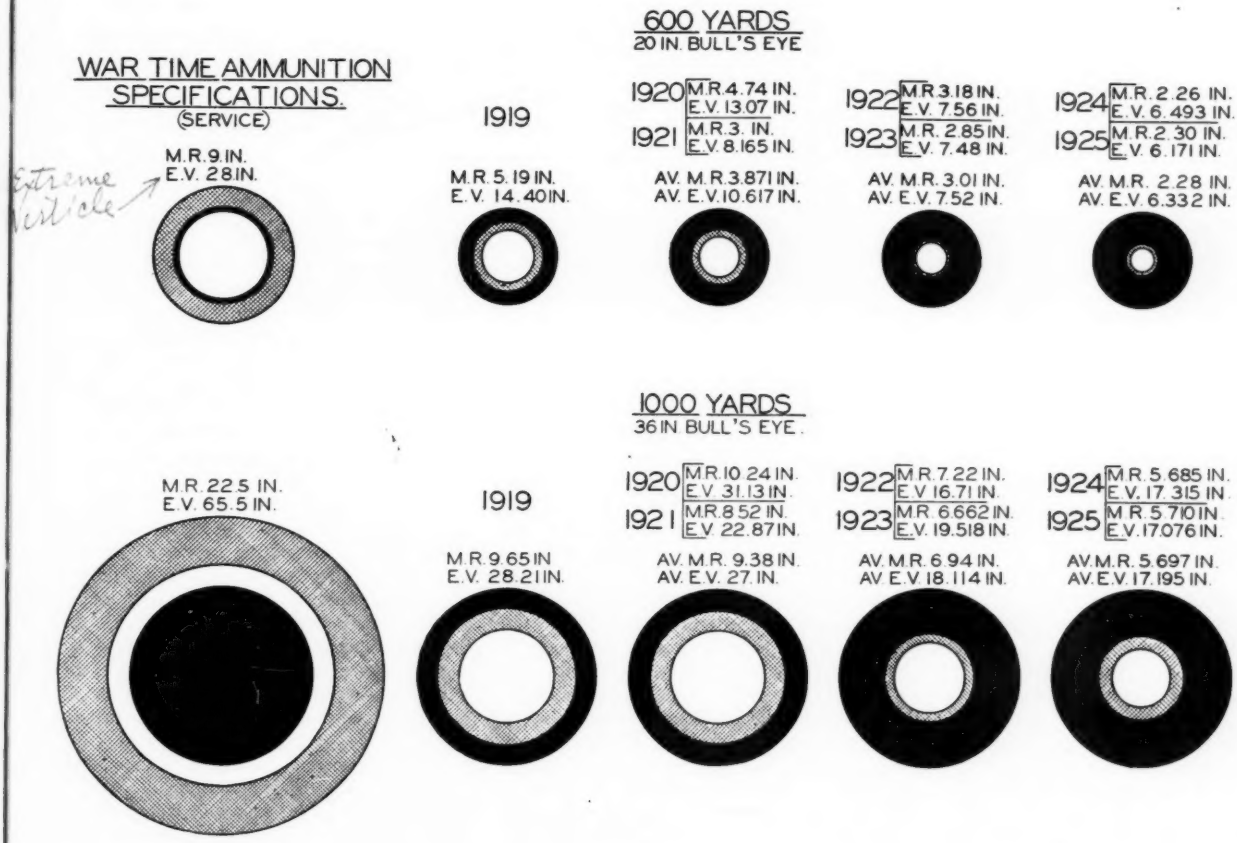

ACCURACY OF NATIONAL MATCH AMMUNITION
1919 – SERVICE 150-GRAIN FLAT BASE BULLET.
1920, 1921-N.M. 170-GRAIN FLAT BASE BULLET.
1922, 1923-N.M. 170-GRAIN 6° BOAT-TAIL BULLET.
1924, 1925-N.M. (NEW SERVICE) 172-GR. 9° BOAT-TAIL BULLET.
600 YARDS
20 IN. BULL'S EYE
WAR TIME AMMUNITION SPECIFICATIONS. (SERVICE)
M.R. 9 IN.
E.V. 28 IN.
Extreme Vertical
1919
M.R. 5.19 IN.
E.V. 14.40 IN.
1920 M.R. 4.74 IN. E.V. 13.07 IN.
1921 M.R. 3. IN. E.V. 8.165 IN.
AV. M.R. 3.871 IN.
AV. E.V. 10.617 IN.
1922 M.R. 3.18 IN. E.V. 7.56 IN.
1923 M.R. 2.85 IN. E.V. 7.48 IN.
AV. M.R. 3.01 IN.
AV. E.V. 7.52 IN.
1924 M.R. 2.26 IN. E.V. 6.493 IN.
1925 M.R. 2.30 IN. E.V. 6.171 IN.
AV. M.R. 2.28 IN.
AV. E.V. 6.332 IN.
1000 YARDS
36 IN BULL'S EYE.
M.R. 22.5 IN.
E.V. 65.5 IN.
1919
M.R. 9.65 IN
E.V. 28.21 IN.
1920 M.R. 10.24 IN. E.V. 31.13 IN.
1921 M.R. 8.52 IN. E.V. 22.87 IN.
AV. M.R. 9.38 IN.
AV. E.V. 27. IN.
1922 M.R. 7.22 IN. E.V. 16.71 IN.
1923 M.R. 6.662 IN. E.V. 19.518 IN.
AV. M.R. 6.94 IN.
AV. E.V. 18.114 IN.
1924 M.R. 5.685 IN. E.V. 17.315 IN.
1925 M.R. 5.710 IN. E.V. 17.076 IN.
AV. M.R. 5.697 IN.
AV. E.V. 17.195 IN.
EACH WHITE CIRCLE HAS A RADIUS EQUAL TO M.R. OF EACH TYPE OF AMMUNITION AT THAT RANGE.
EACH CROSS-HATCHED CIRCLE HAS A DIA. EQUAL TO THE E.V. OF EACH TYPE OF AMM. AT THAT RANGE

Figure 1

to the mean radius should contain all of the shots. Actually, however, the circle to contain all of the shots should be over a third larger than this, or, in other words, it should have a diameter something over three times the length of the mean radius.

The cross-hatched circles in each row are made with a diameter equal to the extreme vertical of each type of ammunition. The group diameter of the group is slightly larger than the extreme vertical of the same group. The extreme vertical, however, very nearly indicates the size of the circle which would contain all the shots.

The specifications for the war time ammunition corresponded in mean radius and extreme vertical to the circles indicated in the first vertical row to the left. This, of course, should represent the worst of the war time ammunition, as all ammunition was supposed to pass these specifications. Actually, however, in certain cases, some lots of ammunition were accepted which exceeded even these specifications. In this connection, no firing was done at ranges of 1,000 yards, the acceptance test usually being 500 yards. However, if the ammunition had been fired at 1,000 yards, it would have corresponded to the indicated figure.

Figure I illustrates the improvement in accuracy of ammunition which has been accomplished from 1919 down until 1925. This improvement was made by means of the National Matches. In 1919, the National Match ammunition selected was the present service ammunition. The test was competitive in that selected lots of war time manufacture were tested against each other, and the most accurate adopted as the National Match ammunition.

The accuracy of this ammunition is shown in the vertical row of circles second from the left. The 1920 and '21 National Match ammunition has been grouped together because both had a 170-grain flat base bullet. It is true that the 1921 bullet was more accurate than the 1920, and that the jacket had a coating of tin. Ballistically, however, the two types of bullet were similar, and have, therefore, been combined for purposes of comparison. The average figure for the combined types is shown in the center vertical row of circles.

In 1922 and '23 the same type bullet was again used, but this bullet differed from the '20-'21 bullet in that it had a 6 degree tapered base. Likewise, in this case, the '23 ammunition was slightly more accurate than the '22, but they have been combined.

In '24-'25 the same type bullet was again used, but this type in turn was different from the '22-'23 in that it had a 9 degree tapered base. The accuracy of both types was almost identical, and the difference can be accounted for by the difference in weather conditions at the test. As a matter of fact, acceptance tests show the '25 as easily the most accurate.

Now the interesting thing to note is that all of this manufacture is by machine methods in quantity production, and not specially hand loaded ammunition. Also that the net result of these six years of effort has been to obtain a new service ammunition. Figure I clearly shows the remarkable increase in accuracy during this period. A glance at

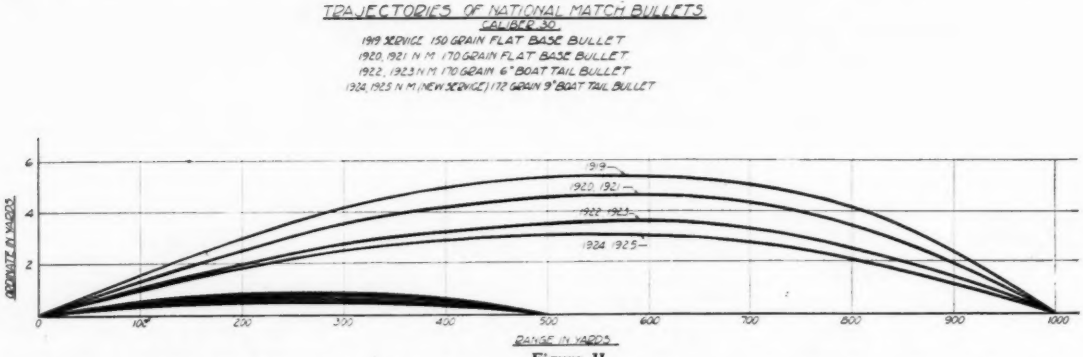

TRAJECTORIES OF NATIONAL MATCH BULLETS
CALIBER .30
1919 SERVICE 150 GRAIN FLAT BASE BULLET
1920, 1921 N.M. 170 GRAIN FLAT BASE BULLET
1922, 1923 N.M. 170 GRAIN 6° BOAT TAIL BULLET
1924, 1925 N.M. (NEW SERVICE) 172 GRAIN 9° BOAT TAIL BULLET
ORDINATE IN YARDS
RANGE IN YARDS
1919
1920, 1921
1922, 1923
1924, 1925

Figure II

the figure from left to right with the decreasing size of the white and cross-hatched circles compared to the black bull's-eyes emphasizes this point.

However, it is not merely the accuracy which has been improved, but the range, the flatness of the trajectory, and the time of flight, and, therefore, the wind resisting ability of the bullet have all been greatly improved.

Figure II shows the trajectory of the same bullet at 500 and 1,000 yards, which corresponds to the accuracy indicated in Figure I. In every case each type of bullet has a flatter trajectory than the preceding one, and the vast superiority of the 1925 National Match bullet, which is the new service bullet of the Army, over the present service bullet is clearly revealed.

Figure III shows the great difference in the extreme range of the same four types of ammunition. This is a graphic illustration of the increase in range which has been obtained by the several types. For instance, the range is only increased a little over 200 yards by increasing the weight of the bullet 20 grains and leaving the velocity and shape about the same. By tapering the base six degrees, the bullet which has twenty grains heavier, ranges about 600 yards farther. By adding another three degrees to the tapered base, an additional 1,200 or 1,300 yards of range were secured. The velocity in all cases is approximately the same, so that the difference in range and flatness of trajectory between the new service and the present service is mostly due to the shape of the base of the bullet.

Insofar as the writer is aware there is no equal period in which such remarkable improvements have been made in range accuracy, and since all of these types of ammunition have been made by Frankford Arsenal, the credit therefore belongs to Frankford Arsenal. Since the National Matches annually require about 2,000,000 rounds of ammunition, each of these general types of ammunition have had a test at the National Matches of 4,000,000 rounds and Frankford Arsenal has had the experience of manufacturing each type in quantity production to the extent of 4,000,000 rounds. Therefore, this increase in accuracy and range is not a fluke, but has been tried out on a large manufacturing and actual test scale.

So much for military service types of ammunition. However, when it comes to a question of the greatest possible accuracy, naturally, special types of Match ammunition which have been raised by hand, so to speak, are the superior of the machine loaded types.

Figure IV shows a comparison of short range caliber .30 special Match ammunition, while Figure V shows the accuracy of long range caliber .30 special Match ammunition. Figure IV is specifically a comparison of International and Olympic types since the year 1912, while Figure V gives the accuracy of Palma and Olympic types since 1909. A complete history of International, Palma and Olympic Match ammunition competitions, as shown by the ammunition tests, is contained in Table IV. It will be noted from this table that it is impossible to obtain a comparison of short range caliber .30 special Match ammunition that does not involve computations of one kind or another by reason of the fact that different methods of testing were used from time to time; different ranges were selected for the test; and different methods of measuring the targets used. In order to reduce all of these factors to a common basis for comparison purposes, it was necessary to resort to the probable accuracy which would be obtained at a range of 300 meters, and use the mean radius system of target measurement. This, as has already been shown in Mr. Jervey's article, "What Price Mean Radius," published in the August 15 issue of "The American Rifleman," was based upon the curves of the various standard target measurements of National Match ammunition at all ranges up to 1,000 yards; i.e., by means of smooth curves plotted from the average results of National Match ammunition tests. It is possible to obtain the ratio of the mean radius at the short ranges to the ratio of the mean radius at the longer ranges for the same type of ammunition, and the ratio of the mean radius of one type of ammunition at one range to any other target measurement, such as extreme vertical or figure of merit at that range and at all other ranges up to 1,000 yards. In this way Figure IV was made up. Each black circle represents the 10-inch bull's-eye at 300 meters, and each white circle has a radius equal to the computed mean radius of a given type of ammunition for a given year.

In case anyone considers that this is tampering with the figures, Figure IV shows exactly what the original figures were, the kind of target measurement and the range. In any case the comparison should be fair because the same method was used in reducing all of the measurements. The decreasing size of the white circles from left to right indicates the increase in accuracy of the especial types of Match ammunition at short ranges from 1912 to 1925.

In this connection it might be mentioned that the test has grown more difficult. In 1912 10 groups of 10 shots each only were fired. In 1925, 24 groups of ten shots each were fired.

Now when we come to the Palma and Olympic types at 1,000 yards, no fudging is necessary because all tests were fired at 1,000 yards and the system of target measurement used to determine the winner was the mean radius. Therefore, the only difficulty in comparison is that of the difference in the method of testing, and the difference in the weather conditions. The tests have grown more severe as time passed just as in the case of the short

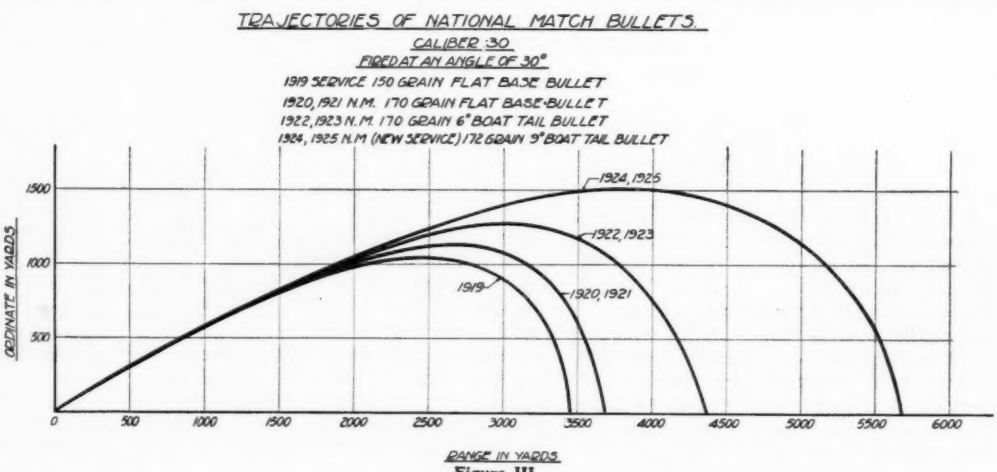

TRAJECTORIES OF NATIONAL MATCH BULLETS
CALIBER .30
FIRED AT AN ANGLE OF 30°
1919 SERVICE 150 GRAIN FLAT BASE BULLET
1920, 1921 N.M. 170 GRAIN FLAT BASE BULLET
1922, 1923 N.M. 170 GRAIN 6° BOAT TAIL BULLET
1924, 1925 N.M. (NEW SERVICE) 172 GRAIN 9° BOAT TAIL BULLET
ORDINATE IN YARDS
RANGE IN YARDS
1924, 1925
1922, 1923
1919
1920, 1921

Figure III

COMPARISON OF SHORT RANGE CAL. .30 SPECIAL MATCH AMMUNITION

INTERNATIONAL AND OLYMPIC TYPES

1912 U.S. C.C. 180 GR. CUPRO-NICKEL F.B. BULLET I.V. 2670 F.S.
1913 WINCHESTER 150 GR. CUPRO-NICKEL F.B. BULLET I.V. 2640 F.S.
1920 REMINGTON 180 GR. CUPRO-NICKEL F.B. BULLET I.V. 2640 F.S.
1923 REMINGTON 180 GR. CUPRO-NICKEL F.B. BULLET I.V. 2670 F.S.
1924 REMINGTON 180 GR. CUPRO-NICKEL F.B. BULLET I.V. 2610 F.S.
1925 FRANKFORD 172 GR. GILDING METAL B.T. BULLET I.V. 2199 F.S.

300 METERS
10 INCH BULL'S EYE

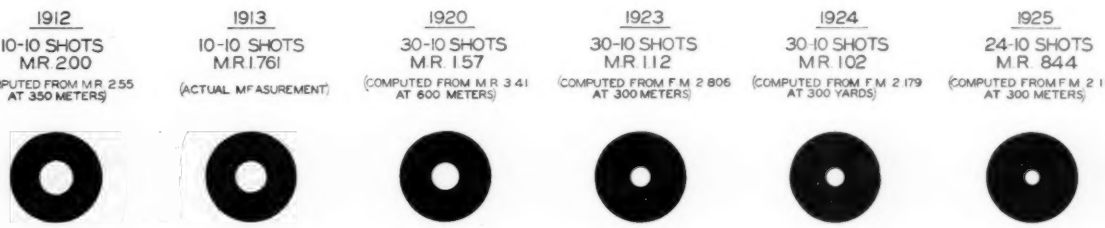


Figure IV

EACH WHITE CIRCLE HAS A RADIUS EQUAL TO THE M.R. OF EACH TYPE OF AMMUNITION AT THAT RANGE

EXPLANATORY NOTE:
THE METHOD OF COMPUTATION USED IN ALL CASES IS BASED UPON SMOOTH CURVES MADE OF AVERAGE RESULTS OF SPECIAL MATCH AMMUNITION TESTS SHOWING COMPARISON OF MEAN RADIUS, MEAN VERTICAL, EXTREME VERTICAL AND EXTREME SPREAD AT ALL RANGES UP TO 1000 YARDS

range special Match ammunition. In 1909, 80 shots were fired to determine the winner; in 1913, ten, ten-shot groups were fired, while in 1925, forty-seven, ten-shot groups were fired.

In all ammunition tests up until 1921, the standard method of testing was with selected service rifles in the machine rest. In 1921 there was incorporated, the use of the Mann rest. In 1921, for the National Match test and for the Palma Match test, half of the firing was done with rifles in machine rests, and half with the large heavy Mann test barrels in the Mann "V" block. Since 1921 all testing has been done with the Mann type of rest. Undoubtedly, therefore, some of the superiority shown in accuracy of the later tests compared to the former tests is due to this improved method of testing.

The most accurate groups ever made at 1,000 yards were those made in the Palma Test for 1925. The winning ammunition for forty-seven target of ten shots each had a mean radius at 1,000 yards of 4.43 inches. However, the last sixteen targets of ten shots each obtained the remarkable mean radius of 3.97. While the test was won at 4.43 inches, this is not the best record that has ever been made at 1,000 yards in the Mann barrel. For instance, in the Palma Test of 1921, when Remington won the Palma Test, the winning figure was 6.04 inches. This included ten targets of ten shots each in the rifle in the machine rest, which gave 7.79 inches. The ten targets of ten shots each in the Mann barrel gave 4.29 inches, so that the average for the test was 6.04 inches. The point is, however, that in this 1921 test all the firing which was done in the Mann barrel was superior to all of the firing which was done in the Mann barrel in 1925. The comparison, however, is unfair to 1925, inasmuch as only ten targets of ten shots each were fired in 1921 as compared to forty-seven targets of ten shots each in 1925. Therefore, the comparison should be between the ten targets of ten shots each fired in 1921 to the sixteen targets of ten shots each fired in 1925. The 1921 figure of 4.29 inches does not compare with the 1925 figure of 3.97 inches, although six more targets were fired in 1925 than were fired in 1921.

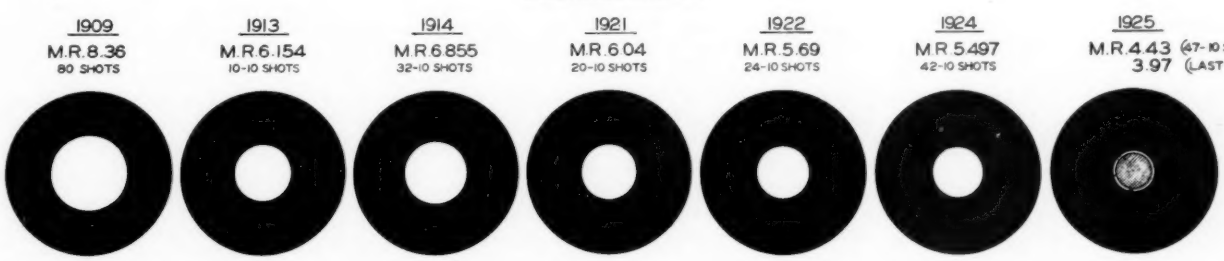
At first thought the conclusion might be drawn that the comparison between the accuracy obtained with the machine rest and the Mann rest would be as 7.79 inches is to 4.29 inches, inasmuch as these were the respective figures obtained in 1921 in the Palma Test at 1,000 yards. However, in 1921 National Match ammunition was also tested in both the machine rest and the Mann rest, and the corresponding figures are 8.62 inches for the machine rest as compared to 8.42 inches for the Mann rest. Without doubt, the Mann rest is considerably superior, taking into consideration all the factors. If this were not

ACCURACY OF LONG RANGE CAL. .30 SPECIAL MATCH AMMUNITION

PALMA AND OLYMPIC TYPES

1909 U.S. C.C. 180 GR. CUPRO-NICKEL F.B. BULLET I.V. 2640 F.S.
1913 U.S. C.C. 180 GR. CUPRO-NICKEL F.B. BULLET I.V. 2640 F.S.
1914 WINCHESTER 180 GR. CUPRO-NICKEL F.B. BULLET I.V. 2640 F.S.
1921 REMINGTON 180 GR. CUPRO-NICKEL F.B. BULLET I.V. 2610 F.S.
1922 WESTERN 180 GR. LUBALOY F.B. BULLET I.V. 2625 F.S.
1924 REMINGTON 200 GR. CUPRO-NICKEL F.B. BULLET I.V. 2475 F.S.
1925 FRANKFORD 172 GR. GILDING METAL B.T. BULLET I.V. 2776 F.S.

1000 YARDS
36 INCH BULL'S EYE



EACH WHITE CIRCLE HAS A RADIUS EQUAL TO M.R. OF EACH TYPE OF AMMUNITION AT THAT RANGE.
CROSS HATCHED CENTER IN 1925 CIRCLE IS M.R. OBTAINED WITH LAST 16 TARGETS.

Figure V

Table IV

INTERNATIONAL, PALMA AND OLYMPIC MATCH AMMUNITION COMPETITIONS

Year	Match	Lot No.	Weight Grains	Bullet Shape	Jacket Material	Powder Weight Grains	Powder Type	Velocity (Mean)	Pressure (Mean)	No. of Targets	Type of Fire	Mean Radius	Other Measurements	Range ft	Rest
1909	Olympic	U.S.C. Co.								80 shots 80 shots 160 shots 80 shots	Slow Rapid Slow Rapid	5.04 in. 4.804 in. 16.61 in. 8.36 in.		600 yds. 600 yds. 1000 yds. 1000 yds.	M.R.
1912	Olympic and Argentine	U.S.C. Co.	180	Flat Base	Cupro-nickel			2670		10-10 shot 10-10 shot		2.55 in. 3.965 in.		350 M. 600 M.	M.R.
1913	Palma and Pan. Amer.	U.S.C.Co. Win.	180 150	Flat Base	Cupro-nickel			2640 2640		10-10 shot 10-10 shot		6.154 in. 1.761 in.		1000 yds. 300 M.	M.R.
1914	Palma	Win.	180	Flat Base	Cupro-nickel		Not Pyro	2668	56,000	32-10 shot		6.855 in.		1000 yds.	M.R.
1920	Olympic	Rem. Lot No. 19	180	Flat Base	Cupro-nickel		HiVel	2640		30-10 shot		3.41 in.	M.V. 2.38 in. M.H. 1.98 E.V. 10.17 E.H. 7.63	600 yds.	M.R.
1921	Palma	Rem. Lot No. X	180	Flat Base	Cupro-nickel	45	HiVel	2610	48,050	10-10 M.R. 10-10 M.B.		7.79 in. 4.29 in. Av.- 6.04 in.	Mach. Mann. M.E. 12.38 in. 7.32 in. M.V. 4.93 3.05 M.H. 4.68 2.51 E.V. 19.74 11.54 E.H. 18.17 9.49	1000 yds.	M.R. & Mann
1922	Palma	Western "Lubaloy" "Palma"	180	Flat Base	Lubaloy	46	HiVel Lot No.2	2625	46,800	24-10 shot		5.69 in.	M.V. 3.96 in. M.H. 3.30 in. E.V. 15.23 in. E.H. 14.10 in.	1000 yds.	Mann
1923	International	Rem. Lot No. 2	180	Flat Base	Cupro-nickel	52.5	DuPont No. 1109	2670	46,940	30-10 shot			F.M. 2.80593 in. A.E.V. 2.4967 in. A.E.H. 3.1152 in. M.G.D. 3.531 in.	300 M.	Mann
1924	International	Rem. Lot No. 2	180	Flat Base	Cupro-nickel	46.3	HiVel	2610	42,100	30-10 shot		5.497 in.	F.M. 2.179 in. A.E.V. 2.23 A.E.H. 2.128 A.E.S. 2.814in.	300 yds.	Mann
	Palma	Rem. Lot No. 1	200	Flat Base	Cupro-nickel	44.5	HiVel	2475	43,300	42-10 shot		5.497 in.	A.E.V. 13.718 in. A.E.H. 13.387 A.E.S. 17.126	1000 yds.	Mann
1925	International	F.A. No. 2	172	9° B.T.	G. M.	37.6	HiVel No. 2	2199	39,545	24-10 shot		4.43 in.	F.M. 2.11 in. A.E.V. 1.88 in. A.E.H. 2.32 in.	300 M.	Mann
	Palma	F.A. No. 3	172	B.T.	G. M.	54.5	DuPont IMR No. 1147	2776	52,385	47-10 shot 16-10 shot		4.43 in. 3.97 in.	A.E.V. 11.36 in. A.E.H. 11.53 in. A.E.S. 14.48 in.	1000 yds.	Mann

Note.—Up to 1921 all tests were fired in rifles held in machine rests. In 1921 half of the test was conducted in this manner and the other half was conducted in Mann barrels in "V" Blocks. Since 1921 all tests have been conducted in the latter manner.

true it would not have superseded the machine rest for testing purposes. Admitting this fact, however, there is also no doubt but that there has been a steady improvement in ammunition, as the figures for the Mann rest for each successive year down to 1925 clearly show this.

Springfield Armory now tests National Match rifles in a rest which is a sort of a combination machine rest and Mann rest; i.e., the rifle itself is used, but instead of being clamped directly to the machine rest, it is fitted into a cradle which has concentric rings as does the Mann barrel, and the rifle in this cradle is then fired in the Mann rest. This cradle was devised by Mr. A. L. Woodworth of Springfield Armory, and is usually referred to as the Woodworth cradle. For testing the accuracy of the rifle it is the best method so far devised, and it often shoots groups that compare favorably in accuracy to the Mann barrel in the Mann rest.

Using the 1925 National Match rifle in the Woodworth cradle, a target of five shots has been obtained at 220 yards which could be covered with a dime.

In this connection it might be stated that the biggest improvements which have been made in accuracy have been due to improvements in ammunition. The lack of accuracy of the rifles made a few years ago was not inherent in the rifles, but was in the ammunition, as these rifles shoot remarkable groups when they are provided with 1925 types of ammunition. There has been some improvement made in the rifle, particularly with regard to decreasing variations in the zero of the rifle, due to warping of stocks, etc. The improvements in the rifle, however, have not been very great, as there was no room for improvement. There was room for improvement in the ammunition, but this does not detract in any way from the credit due to Frankford Arsenal, as the remarkable results obtained have been accomplished with their product, which has not been equaled, in so far as the writer is aware, by the product of any other Nation for similar types of ammunition.

Summing up, the evolution of accuracy and range of small arms and ammunition has been traced throughout all ages. The last century has seen the following remarkable improvements. One hundred years ago the standard military smooth bore musket of the United States Army could just about be depended upon to hit a man at 100 yards. Today a man can be hit at 1,000 yards as easily as he could be hit 100 years ago at 100 yards. The modern sniper with a telescopic sight and special ammunition can hit a man with reasonable certainty under favorable conditions at 1,500 yards. Therefore, the accuracy and range have increased, so that at ten to fifteen times the distance the same target can be hit with equal certainty.

One hundred years ago the standard military smooth bore musket of the United States Army required a circle of about three feet in diameter, in order to include every shot of ten consecutive rounds at 100 yards. Today, this circle is about three inches, and all shots of a ten-shot group at 100 yards have been obtained, that apparently pass through the same shot hole. Such a group is rare, but is not much rarer than the three foot, ten-shot group of 100 years ago.

One hundred years ago a rifleman fired one shot every two minutes. Today, if necessary, twenty rounds a minute can be fired.

One hundred years ago the penetration of the standard military musket at 100 yards in oak was insufficient to bury the ball. Today, at 100 yards, under the same conditions, the penetration is more than twenty times as great.

The eyes and the physical make-up of the shooter of today are probably little, if any superior to the shooter of 100 years ago. In training and intelligence the shooter of today is, of course, far superior. The three primary causes for the remarkable strides of the last century have been the perfection of the weapon, particularly the barrel and sights the perfection of the ammunition; and the training of the man that pulls the trigger. The progress made has been astonishing.

For the immediate future, it is possible to foresee but little increase in accuracy for the simple reason that the shot group has now grown to the point where a little greater increase in the accuracy will mean that all shots are passing through the same hole at the short ranges, and will be nearly touching each other at the mid ranges.

"Straight-Line"

By F. C. Ness

HANDLOADING may be divided into two branches. In its simpler, elementary form, it consists of putting new primers in fired cases, pouring in an indeterminate quantity of powder, and shoving in a ball, bullet, or charge of shot on top. The crudity of such a cartridge is restricted only by the confining limitations of the gun-chamber into which it is to be jammed, usually requiring considerable force. Or the bullet may be omitted as unessential, for the main purpose such crude ammunition serves is to make a noise.

Elevated to its real province, however, handloading is a science; the science of "straight-line." The shooter may buy factory components—primed cases, jacketed bullets, and kegs of powder—in quantity, and assemble his own loads, or reload his fired cases, with the proper tools and thus cut a straight-line to cartridge economy. Or, the reloading purpose may be to design particular loads to meet special needs, such as cutting a straight line to the target; either flatter trajectory or smaller groups in that peculiar bore. All a straight-line business.

No matter what the purpose, cutting a straight-line to the target is the very first requisite. Without accuracy and sufficient power, no handloading pays, even though the cost be cheap. Fine-grouping accuracy is impossible without absolute accuracy in the handloading. With the right tools and sufficient ballistic technique the scientific handloader may readily surpass factory precision in suiting the idiosyncracies of his own particular gun. He might choose a bullet of a good projectile-type, long in proportion to its mass, and of the correct and over-size diameter to secure absolute gas-seal and sufficient bearing-friction; he may adopt a powder suited to the burning conditions of the cartridge, or the pressures of that load, and a primer giving the proper ignition; he might even suit the seating depth and the cross-section of that part of the bullet which protrudes from the case-mouth to ride just right on top of the lands in the throat of his rifle, balance the grain-weight of his powder-charge down to a nicety with the requirements of the gun and bullet used; and still fall short in the matter of expected fine accuracy, because he lacks accurate assembling equipment, or is careless in his reloading.

Even for ordinary accuracy, correctly balanced components are not all that is required. To justify his expectation of fine groups, he must carry his care and precision to putting them together into the finished cartridge. The first essential is to seat the bullet in a straight-line with the longitudinal axis of the case, for thus it is automatically held true with the straight-line of the bore. Only secondary to this is the essential of holding the bullet friction-tight in the case-neck with sufficient tension to bring about the proper combustion of the powder charge. Thirdly, the seating depth must be right; on the one hand, to secure proper fit in the throat of the rifle, and on the other, to secure the right air-space between the powder and the base of the bullet. Now we have made the first cartridge O. K.

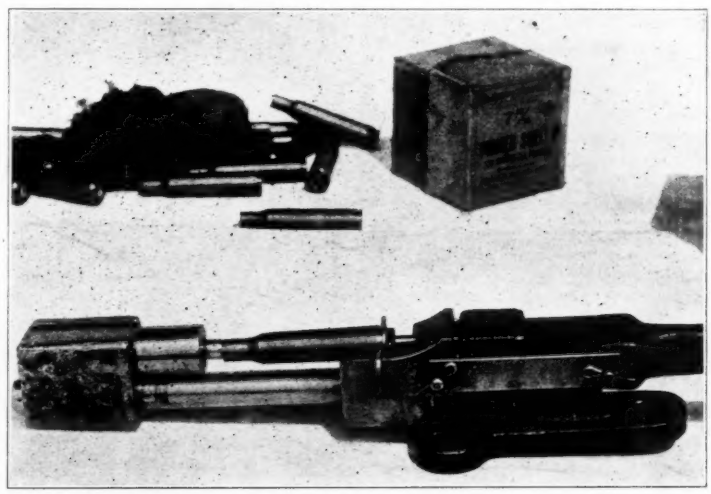


Figure 1. Muzzle resizing and expanding is done in one easy movement of the lever.

in every respect. With the sights so adjusted we may rightly expect it to land on the "eye" of the Bull. But, even when the gun is held and aimed in precisely the same manner, we have no assurance the rest of the cartridges in the lot will send their bullets to the same "ten-ring" unless they are loaded and assembled *exactly* like the first.

Super-accuracy is impossible without *uniformity*. If the weight of the powder charge varies a few grains, or the primers are of uneven strength, or the bullet is held unevenly tight or loose, or is seated to varying depths in the case-neck, velocities and pressures are bound to vary, and it is inevitable each slightly different load will have a slightly different grouping-zero on the target. To just shoot, all that is necesary is decapping, repriming, charging with powder, and seating the bullets. But to shoot *with accuracy* the case-neck *must* be carefully resized to a uniform inside-diameter to hold each bullet with the proper and *same* amount of tension. This operation is provided for in all reloading tools, by means of a die for reducing the case-necks, and an expanding-plug with which to open these reduced necks all to the same correct diameter, the amount being regulated by the bullet diameter of the rifle-caliber and the type of bullet—whether lead-alloy cast-bullets or metal-cased jacketed bullets.

This resizing should extend as far down as the base of the bullet goes in the case, which means down to the shoulders of bottleneck shells and to the cannelure or bullet-crease of straight cartridges. With long cases having long necks, such as, certain rifles, it is best to use a *straight-line* tool for the operation. In the lever tools, though the work is uniform and accurate enough for ordinary purposes, the applied force is a swinging motion instead of a straight shove, and more pressure is applied to one side of the cartridge than the other, which results in a shade more resizing alteration in one side of the neck or case. With our tool properly adjusted for depth, etc., (and we put all our shells in a given lot through the same operation), they are bound to be uniformly and correctly prepared for loading.

Granted these cases are primed with primers of even strength, we must now charge them uniformly, each with exactly the same amount of a pre-determined weight and kind of powder. With bulk powders this may be accomplished by dipping with a dipper or charge-cup of the correct capacity. With dense powders it is best to use an Ideal or Bond powder-measure. These machines consist of a hollow cylinder turned by means of a handle on the end, and a hopper above it for the powder. The upward stroke of the handle fills the barrel, or cylinder-recess, and the down-stroke discharges the powder into a droptube beneath which funnels it into the shell. When these measures are set (by a table, or by weighing the charge of the powder-balance) to throw a certain grain-weight charge of the particular brand of powder carried in the hopper, they will throw successive charges with adequate uniformity.

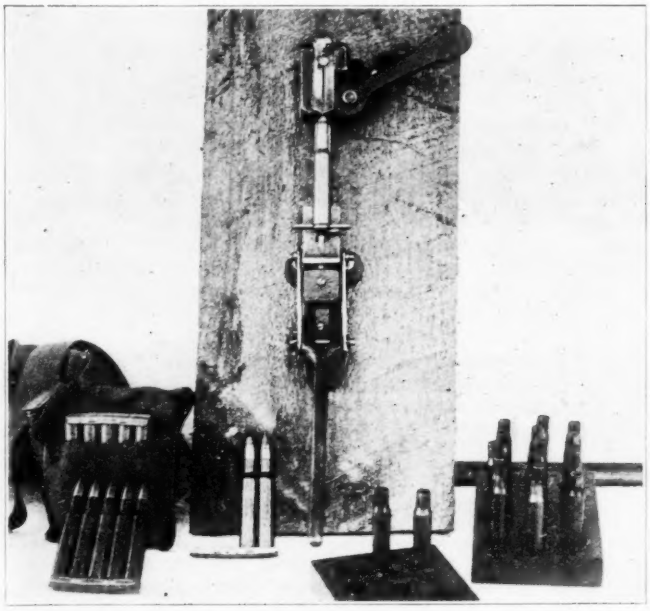
If fine-grain powder is used, individual charges will vary less than ½-gr. High-pressure smokeless for big capacity shells of the .30-'06 or Ross type (like du Pont No. 15 or Hercules HiVel) or any coarse grained powder that won't feed properly through the powder measure, must either be dipped in a carefully checked-up charge-cup accomodating the correct grain-weight charge, or each charge must be weighed on a speedy beamscale of 1-10th-gr.-accuracy

like the Bond 354, of the Fairbanks type.

Now we come to the hardest single-operation of handloading—starting and seating the bullet in the case-mouth in a straight-line. Case-necks that have been properly resized are a couple thousandths of an inch less in diameter than the base of the bullet. Accordingly, it is difficult to start the bullet in the case-mouth, and I find it necessary to chamfer the mouth slightly with a pen-knife or some other reaming instrument, such as that on the back of a Bond loading tool, to facilitate starting the bullet. I chamfer shell-muzzles, no matter what tool I use, for all bullets, even gas-checks. This can not be dispensed with except when full-jacketed or boat-tailed bullets are used. If the bullet is not correctly started in a straight-line with the axis of the case, the base will become shaved, and the bullet will become distorted, or will tip to bend the case-neck, or even in mild form will distort the true shape of the finished cartridge, when the handles are closed and the bullet is seated. Of course, no worth-while degree of accuracy can be expected of such misshapen cartridges. This bullet-seating is the slowest part of reloading, for it must be done right to secure accuracy, and soft-cast-bullets are easily damaged.

After the bullet is started in the case as nearly in straight-line as you can get it, hold the lever-tool inverted in the left hand with the double-adjustable seating chamber up. Now shove up your cartridge, bullet first, and be careful not to dislodge it. When it touches the seating-plug, retain your pressure upon it and give it a little twist to ease it into the concaved face of the seating-plug and to keep it centered. Never release it, but keep your finger on the cartridge-head until you bring the other handle up to engage it. Now use but gentle force on the handles to seat the bullet. All loading operations should be acomplished with little force. If considerabe force is required it is a certain sign something has gone crooked or caught, and, if the pressure is continued, the case will buckle or the bullet will be damaged. Pull the cartridge out again if the bullet does not seat easily, and you will find that it has been tipped in the case-mouth. Straighten it, and it will seat easily. So important is the proper starting of the bullet to me, that when I designed a .45 Colt bullet last year, I made provision for this very purpose by tapering the (hollow-base) broad bottom-band from the true diameter of .454 inch on top to .451 inch at the bottom or base-edge. This makes easy straight-line starting in .45 Colt cases that are properly resized to .452 inches. I find this bullet much quicker and easier to load accurately than any other Peacemaker bullet. It is known as the Bond No. C-454760, 235-grain, Wad-cutter.

I have loaded several *dozens* of regular rifle cartridges in the old Winchester straight-line, screw-and-lever tool; and several *hundred*, regular and squibb, rifle cartridges in the Ideal lever tool and several *thousand handgun* cartridges in the Bond lever tool. The Winchester employed two mechanical power systems—screw and lever. It had the virtue of sizing the entire cartridge full-length, and cartridges loaded in it were always sure to work properly through the mechanism of the rifles. It was accurate, but slow, and has been obsolete for some time, though I see one now and then in junk shops. The Ideal lever tool had the same technical faults inherent to all lever tools. Theoretically, the loading pressure had to be applied somewhat cross-wise instead of truly straight-line, and, in consequence, it permitted inadvertent loading inaccuracies to creep in. Only handgun cartridges were loaded with the Bond lever tool, and pistol or revolver cartridges are comparatively easy to load, for they are short, straight, and proportionately broad in cross-section. Though I have loaded thousands of cartridges with it (used it yesterday morning, and will use it again some time this week) because it is convenient and I have gotten accurate results with it; still, I realize it is far from perfect in design and principle.



The bullet-pulling attachment works to perfection. Bullets and shells both in shape to use again.

The handle-part, or main body, of the Bond tool is superior to the Ideal in material, because it is made of rustless bronze; in design, because the tool is heavy enough so that the two holes in the lower handle are made standard, permitting the interchangeable use of both primer-bushing and loading-chamber for different calibres or cartridges in the same tool. Thus, it is not solid like a one-cartridge tool, which, of course, makes it less sturdy and reliable. This fact is borne out in resizing handgun cartridges that have expanded quite a bit, for the base-bushing is often pulled out in extracting a tight shell. I believe there ought to be two large screws to hold the base-bushing instead of the one small screw used. Next objection is, that in resizing, two operations are necessary: first, the neck-die is screwed into the first, or large-hole, and adjusted; and, after the case-necks have been reduced, the double-adjustable chamber replaces it to expand the necks again to the right inside-dimensions, with the expanding-plug. In seating the bullet, again, this expanding-plug must be taken out and replaced with the bullet seater or seating-plug. While such a design conveniently covers a wide field of uses in a simple, compact tool, all this changing and adjustment of parts is a bother and takes time. In decapping, the decapping-shank must be used in the double-adjustable chamber. This decapping-shank has a detachable pin in one end for punching out old primers. I can decap .45 Colt cases at the rate of ten per minute—when everything goes right. This would mean 600 per hour, but I can't decap an hour without breaking one or more pins, for it is necessary to center the pin squarely in the flash-hole, or the pin is gradually bent out of line and finally breaks. However, it is quickly replaced with another by means of the small, knurled nut which holds it to the shank, but it is wise to order a couple-dozen extra decapping pins with the tool. At first, my decapping shank stuck to the fired cases so tightly I had to use a pair of pliers in some instances to pull the shells off the shank. This is easily remedied by turning down the forward, or top, half of the decapping-shank a couple thousandths of an inch. Since I did this, I have had no sticking-trouble with mine. Still, the decapping is not efficient, except when I am lucky: either use time to center the cases carefully, or trust to luck and go fast only to use time in replacing broken decapping-pins. The last objection, is that there is no cartridge-extraction provision for the second, or small-hole, in the handle. This hole accomodates the priming-bushing for repriming, and the bullet-die for resizing home-cast bullets, if you happen to lack the extremely essential Bond or Ideal bullet-sizing and lubricating press. In using the repriming bushing nearly every cartridge case sticks so tightly it must be driven out with a wooden mallet, and often with a wooden plug and hammer. This makes repriming very slow and inconvenient. The only way this can be eliminated is to resize your shells full-length with a Yankee die and plunger made for the purpose, or drill a hole the size of the case diameter in a ¼-inch steel plate and drive all your badly expanded fired cases into this hole as deep as the rim at the cartridge head. In my Bond tool, with .45 Colt caliber parts, I can *(Continued on page 20)*

Camp Perry

Part I—From the Outside

By Chauncey Thomas

EARLY copy delighteth the editor but it giveth the reporter sore feet and eye-strain, not to mention the earache. I have been here, Camp Perry, just one week tonight, and have walked and retraced only about half the square mile of it, and talked with not over half the 4,000 or 5,000 men, plus some womenfolks and children, on aforesaid section. And tonight, that is just one week, remember, I have soaked up perhaps ten per cent of it all. Things happen here, lots of them, all around one all the time, and one meets almost a constant string of mighty interesting people. So as the Bible begins all Creation was without form and void, we will begin this year's account of the Camp Perry shooting match in the same way.

First, although this story, and others to follow it, of course, cannot be better than those of former years concerning "Perry," yet this year my "story" will be different. Those of other years were written largely about what "we did": I shall try to make my account about what "they do there," and will write it more or less as a personal chatty letter to the man who has not been here. Out over the 3,000 x 1,500 miles of the United States are thousands of rifle and sixgun men who want to come to Camp Perry, but somehow they just don't feel like trying it. It is too uncertain, especially as they know no one within hundreds of miles, and what does it cost? This letter is written to those very men.

The more formal parts of the story will come later, after they have occurred. This is just a rambling letter, man to man, from one who is, or rather was, a total stranger not only in Camp Perry but in all Ohio. Knew not a soul, and had to count the dimes like most powder burners. It is an odd fact that the better shot a man is the less money he has. Not in my case, however, as I came to see, not to shoot. The doctors said "No" about that. Now if a man who had to persuade his doctors to let him crawl into a Pullman instead of resting comfortably on the operating table, can enjoy life here at Perry the way I have the past week, then there is not a man in the land able to walk without crutches who need stay home because of the life here. Camp Perry is one of the best vacation places and health resorts in America.

That term, of course, calls up the suggestion of big bills, but Perry is as economical as it is pleasant. The most important item of information I have yet found on the grounds is the bill of fare at the Camp Cafeteria. One dollar a day will feed a hungry man all he can eat. The prices are about half for the same quality and quantity of food as in the usual American city. For example, all side dishes, such as corn, beets, sauerkraut, sliced tomatoes, lettuce, are five cents each, not just a dab to soil the middle of the dish, but a good generous helping; ice cream, a larger dishful than most drugstores sell for 15 cents, is five cents; slice of watermelon a nickel; coffee, mighty good coffee too, pint glass of good milk, hot or iced tea, butter milk, all five cents each, with sugar and cream free; fried chicken thirty-five cents, and not a buckskin rooster either; pork chops, veal cutlets, and such meats run from twenty to thirty cents; eggs any style, five cents each. And the articles are fresh, clean, served hot and well cooked. In short, from twenty-five to thirty-five cents will buy as good a meal as from half a dollar to six bits in the city, or country small town.

Beds, tents, shower baths, all such things are free. The tents are the regular army tents, 16 x 16 feet, four men to a tent as a rule, more if they wish to live together under one roof, a good wood floor, set up off the ground, clean and dry. The weather is not cold enough to need any heating. So far, the nights have been as cool as those of Colorado, and one night I pulled up the third new army blanket, as it was a trifle cold near morning. The weather so far has been ideal, clear cool windless days, cool cloudless full moonlit nights. Colorado is famed for its climate, and my first week makes me feel that they imported Colorado climate to make me feel at home. Real nice of them. But last year it rained about half the time, so take your choice. What happened last year I am not responsible for. All I can tell here as I said, is just what has occurred to a total stranger in Camp Perry the first week, and what it costs.

I came from the West, so follow me down to the station in Denver, where the ticket agent said $72 for a round trip to Perry, if the rate and one-half went into effect because 250 shooters bought tickets. If less than 250 bought tickets to the Perry shoot from all all over the U.S. in the summer, various special full fares would figure up to about $96 for the ticket both ways. But incidentally from all over the U. S. in the sumer, various special or vacation round trip rates are in effect, so by combining these I bought a round trip to Toledo and return from Denver for $75. I have forgotten the various cents, but the dollar figures are correct. They have to be, with me just as with you, and for exactly the same reason. You and I are in the same boat. Pullman berth was $11.50, and with the usual tips, that cost for the one way was about $13 flat. Diner meals are of course about one-half more, because of the greater cost of cooking and eating over wheels, than on the ground, and diner meals run from $1 to $2 each. Say $10 for meals, and diner tips. Same for return, of course. Total rail cost when the trip is done and one unlocks the home door, about $125.

I suppose that everybody here does not come from Denver, but the above figures give some idea of it all. That is high, of course, but once in Perry itself, the expenses dropped to half living expenses in Denver for the same scale of eating. In camp there is nothing else one need spend any money for. I corraled a cowpuncher friend of mine from the Rockies. He had been here several days ahead of me, and he was alive and happy with just six cents, a nickel and a penny, in his pocket. He had a meal ticket, a good bed, and that was all he needed. The government supplied the rest free, including a brand new match Springfield rifle, and the necessary cartridges for it. Not old war firecrackers, but first class 1924 kind, and for some of the matches, the best handloaded Frankfort handload Palma ones. In the match today, the "any rifle" one, he won fourth place, and all with six cents. He had a trifle more coinage in his pants, of course, when I learned about the lonesome half-bit (a bit is 12.5 cents in Mex west of the Big Muddy) but that is his affair and mine.

But it does take from twenty-five cents to one dollar to enter into various of the most important matches, especially for those silver cups as large as beer kegs, empty alas, but ten dollars total will enter any man in all the shoots he will have time and energy to fire. So there are your financial figures, fellow Poorman. Calculate details for yourself, if you live farther away from or nearer Camp Perry than I do. I am betraying lots of my personal affairs here, of course, but what of it? Why not? No disgrace, and I do it simply to make others like me feel that they are not reading a dispensation from the High Gods rained down on the lowly, but from one like most of us, so they will know where they get off, too, if they come to Camp Perry next year.

Now does it make any difference if you are rich or poor, well dressed and dolled up, or busted and in overalls? Everyone here wears overalls, except the commissioned officers and the regular troops, sailors, and those snappy keen young men we call marines. There are about five thousand men in Camp Perry tonight, and except the ones mentioned, it would take a chemical analysis to tell one civilian from another. It is just like the ranks during the training camps when the Dutch treat was on several years back. All alike.

The finest thing in this camp is the attitude of the commissioned officers. Without relaxing one iota of their official or personal dignity, without loosening one inch the well held reins of their necessary authority, they are as courteous, as kindly helpful to the youngest greenest rawest backwoods total stranger in overalls as to one another, or the best dressed sightseeing owner of a Pierce Arrow rolling along the paved roads of the Camp to

see what he can see on a Sunday afternoon. For instance,—I stood chatting a moment at the door of my place with a major of the regulars, a man whom I had not known five minutes, when the army truck backed up to the same door, and two privates in worn and soiled overalls unloaded a crate from Tiffany's, New York City, containing one of the big silver trophies. The screen door was in the road, closed. Before I could take in the situation, the major stepped forward, opened and held back that screen door while the two privates packed in the heavy case. Then he closed the screen, and went on talking to me as if nothing had happened. But something had. That was fine, that is the Spirit of Perry.

No monkey business is allowed. A grafter with an Ohio State political pull sneaked a bootleg and perhaps worse affair up to the borders of the camp, but the pleasant commander-in-chief of the camp, Colonel McNab, promptly sent some of the M. P. (military police) over there, and it dried up P. D. Q. "Keep it closed" was his crisp order to the M. P.—then with a smile he turned to answer a commonplace question—"Where is there a bath house, Mister?" from a half scared long lank rifleman about twenty years old, evidently, as I learned later, from the hills of Kentucky, a regular squirrel shooter, in Perry for the first time. He had no idea he was talking to the commanding officer of five thousand men, and it was all right that he was. Colonel McNab directed him as if all commanders-in-chief were sentries, which in fact they are, in an international sense.

These two chips from many I have observed here this past week show which way the current runs, and there is nothing of that thing the English call "swank" in Perry. Nor are there any boot or monkeyshines. Of all the well-arranged, well-ordered and well-run places I have seen in the past twenty years, from New York City to Frisco, Camp Perry this year is the best.

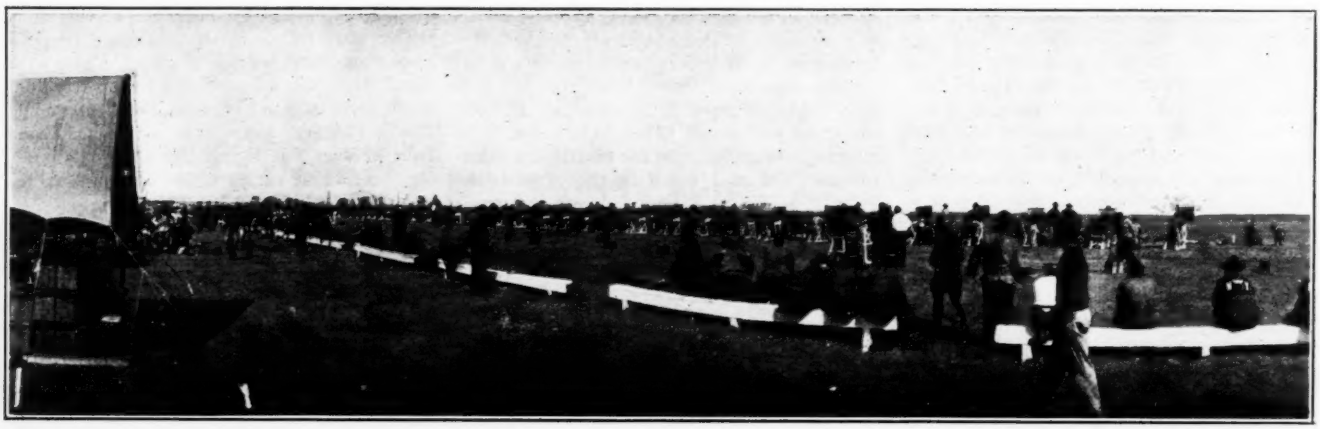
I have not the least intention of burdening these pages with that cross between a rairoad time table and a crossword puzzle called the official arrangements about the various matches. I can't figure it out for myself, and no one else need do so. When a man steps off the train right on the ground in Camp Perry, and his trunk is dumped off right beside him, a sergeant, maybe a commisioned officer, maybe the champion shot of last year's matches, anyone, they act all alike, points up the main road about one block where there is a sign "Every one register here." Just trot up there and stand on one foot, then on the other. The courteous and very efficient young captain in command of that tent tells you what to do. You just fill out two cards, that go on file so that they will know who you are, where you came from, and where to put you. You get your tent number right then and there. Don't worry, there are hundreds ahead of you and hundreds will follow you and you won't get lost. You are conducted to the right place, taken to the quartermaster tent, where you get your cot, blankets, etc., and then to the gunman, where you get your rifle, belt, cleaning tools, but no cartridges.

No cartridges are allowed anywhere in Perry except right on the firing line, and they are issued only when and as needed. There is therefore less chance of getting shot in Perry than in any other city of 5,000 people in America today. Half a dozen rifles in each tent, but not a loose cartridge in camp. Every one is personally interested in seeing that this rule is followed religiously, for a rifle bullet can kill a mile away, remember, and no one wants one to sing his way. A man was shot accidentally at Perry several years ago because of violation of this sane rule, hence the iron teeth in it now. Those kindly courteous commissioned officers mentioned awhile back, who hold open screen doors to overalled privates lugging in crates, see to the cartridges as well as to crates.

Camp Perry is as far from being a sissy Sunday School picnic as it is from being a gang of rowdies, or a starched and dried dress parade. Tonight I passed the camp of regulars, the 28th U. S. Infantry, about 1,000 men, and the regimental band was playing. Good music, too. On the grass lay captains, privates, majors and rookies, unattached civilians as you and I are called, while here and there a little girl and boy darted about in the gathering dusk of evening, and in the cool distance came faintly the bugle call of the navy men, or the marines, I don't know which. Such a condition could not last for long, of course, year in and year out, but it does exist for at least one good clean pleasant month at Camp Perry. There is a wise firm sane guiding hand at the head of it all, somewhere.

Now take this 28th Infantry. "Just regular soldiers" of course, yes, regular soldiers. It was a regular soldier who held open that screen door, and one who closed the bootleg joint. Just about the time I want to do my second sleep, about 7:15 A. M. here comes the noisiest affair in Ohio up and down and all around the camp streets, playing something idiotic about "Can't get 'em up, can't get 'em up, can't get 'em up in the morning....." If some one has a muzzle silencer for that bugle and knows how to wet that drum head, please forward to me by wire and receive a rich reward. But you get up, first to kill that drum major, then to wash your face. There are half a dozen places to eat. You can perch like a little birdie on a stool across the main street of the Camp and have a cup of brew d'Java for a nickel, two of 'em for a dime, and three fried holes for another dime, just like home town, or you can invade the cafeteria spoken of before, or you can walk about six city blocks to the Club House if you want something better, and that of course costs more, all within camp limits by the way. Oh yes, you can spend several dollars at the Club House, and tip the waiter with two or four bits as you feel like, and it too is worth the money, for there is the lake out the window, the "Wildcat Water" of the Indians that the whites now call Lake Erie. The view over the white cloth is worth the money, and the meal is thrown in extra, so to speak. Or there is that stool and the three fried holes for a dime as usual. If you want to be exclusive, you can; if you want to mix, you can; but you can't make any one else uncomfortable, simply because it is not the Spirit of the Camp so to do.

But that sleepkilling noise up and down the tent lanes. Soon here come the regulars of the 28th Infantry, over nine hundred of them, in fours abreast and overalls, going to the pits where they tend targets all day long, and without a thought of extra pay. It is a part of their job. Just as the major held open the



door, so they too do their part, and with the same good grace and pleasant care that you get a five if you shoot a five. Counting the work they do in their own camp before going to the target pits, and after, they put in over ten hours' hard work a day—it is nearer twelve hours per day for them. I say the finest thing in camp is the attitude of the commissioned officers—let's think that over a bit! Those nine hundred men going up the road—working ten, working twelve, hours a day for you and me, just so we can learn to shoot a rifle. No hotel between the Big Salt Waters tries harder or with more success to make it pleasant, safe, and profitable to the lone stranger than does Camp Perry.

This is being written September 4, and the camp is not yet fully started. For two odd weeks back have been the training schools for the beginners, only within the past two days have the real matches been on. Commercial Row, as the line of white frame one story houses where Colt, Smith & Wesson, Winchester, Peters, Hoffmans, Du Ponts, Hercules, Western, Remington, Feckers, Belding & Mull, hold forth is called, that most interesting line of gunology in America is not yet all unpacked and spread out. The camp is not yet fully under way, hence I have little to tell. Maybe some more next time. But early copy delighteth the editor, hence this personal letter to the reader from a stranger in a strange place where he feels perfectly at home, and where it cost less to live than at home. More next time.

Part II—From the Inside

AS I remarked before, the account of Camp Perry matches this year in this magazine are written for the outsider, for the man who is not here, but wants to come, but does not for various reasons, mostly personal. The first article, written hurriedly after only four days as a total stranger on the grounds, gave, perhaps, the impressions that an ordinary newcomer like myself might expect. I have now been here fifteen days, and am reasonably at home. So this article, the second one, will deal with "Camp Perry From the Inside," still from the point of view of a newcomer to the matches.

Except that Camp Perry was in Ohio I for one had not the least idea where it was located. To repeat a line from the first article, "Camp Perry is on the shore of Lake Erie about thirty miles east of Toledo." Most maps do not show the location of the Camp, hence the national and almost universal confusion as to where it is located.

Nor does one out of a thousand shooters over the United States have the slightest idea what the Camp is like. I pictured it before I came as a more or less solid city of tents, just as most civilians picture any military camp. The first thing that surprised me when I rolled into camp in the official buss from the little side railroad station two miles away, north down the lake shore was that there were buildings here. Also paved roads, and plenty of open spaces.

The mess hall, for instance, is a large permanent building of two stories, and "Commercial Row," the local and also official name for all the gunstore exhibits, is made up of perhaps a dozen one story wooden buildings, as permanent as frame structures can be expected to be. Along what might be called the main street of the Camp are various wooden buildings, wherein are several stores, eating places, the Post Office, one of the hospitals, etc. The tents are in groups, the regular army here, the marines there, the navy men elsewhere, each by themselves, more or less. To the civilian, therefore, Camp Perry is about one half park, and this park contains half a dozen little camp villages, with a small town built of wood in the center, all with good roads but no sidewalks. There are plenty of trees and grass when the weather is hot, and no "Keep Off" signs.

So much for about one half of the Camp, the half farthest from the lake shore. The other half of the camp site, the half next the shore line, is completely taken up with the rifle ranges. The lake shore runs at an angle with the camp streets, so that this half of the site is a rough triangle. The longest range, 1,000 yards is on the left, looking north across Lake Erie, and the ranges get shorter and shorter, till the 200 yard range is about opposite of the center of the camp, then on the corner of the triangle is the pistol and the .22 rifle ranges, 50 yards and 100 yards, though the .22 rifle range can be stretched when desired, tto 200 yards. Thus all the ranges point, so to speak, north, and all of course have the open waters of Lake Erie as a bullet catcher. That is, every shot fired at Perry, except the pistol and .22 bullets, go through the targets out onto and into the lake.

Along the lake shore to the east, on the northeastern corner of the camp, is located a so-called "Club House" and the "Squaw Camp" but that the civilian stranger would recognize simply as a small but good hotel and a tent camp for the women and children. No women or children are of course allowed to live in the regular tent villages, which are reserved exclusively for men. But it is not over a quarter of a mile from the farthest tent village of men to the "Squaw Camp" and any man on the grounds can live in the "Squaw Camp" with his family if he so wishes. The squaw tents all have wood walls about six feet high, electric light, wood floors, and wood doors. All tents in camp have wood floors, but the shooters' tents have no wooden walls. In short, the squaw tents are comfortable 16 x 16 foot frame houses of one room with a canvas roof. Though necessarily more or less primitive, a la camping out, the squaw tents, or houses, are perfectly comfortable, insure family privacy, clean, healthy and good to live in on a vacation system. One is not supposed to cook in them, so this simplifies the sanitary question a whole lot. All meals on the grounds are supposed to be taken in some of the eating houses, from "coffee and fried holes" (doughnuts) on a stool at 15 cents to a dinner for about $2 at the hotel or "Club House."

A constant question out over the country about Perry is—"Is there a hotel there where my family can stay while I shoot?" Certainly, just as outlined here. The name "Club House" is a bit unfortunate in this respect, so far as the outside civilian folks are concerned, for it is not a club at all, at least while the matches are on, but it is a hotel, open to every one, just like any other hotel.

Now as I said, the rifle targets are all along the lake shore between the men's tent villages and the lake, but down at this eastern end of the camp is plenty of lake shore, with

boats, bathing, sand for the children to roll in, and down farther along the shore are the usual summer cottages, most of them for rent for the summer, just as on a thousand lake shores in America. These private cottages have nothing to do with the camp whatever, the buildings and the land are private property, and as such we now turn back along the road for a half-mile walk into the camp itself.

I mention these private cottages here simply because some men may have the idea of spending several months if not actually in at least alongside of Camp Perry, so that they can thereby become accustomed to the local weather and other shooting conditions. More of this later, if the "mile high men" expect to capture some of the choicest prizes and to break some world records. The answer here, in a word, is "wind and weather." Judge that correctly and you have a stranglehold on one of the big silver cups.

In my first article, I gave a quick outline of the personal cost of getting to and from Camp Perry, and the personal cost of living here. It will do no harm to repeat in a brief line that the actual living costs at Perry are about one-half for the same things as in any city or good sized town in America. By "Perry" I always mean "Camp Perry," by the way. One dollar a day will give any man all he can eat, and all the good bed he can sleep in at one time.

The squaw tents rent for $1 per day. Meals at the hotel run from $1 to $2 each, and there are a few rooms available, but these are all practically engaged a long time in advance by the various Ohio state and national officials, so the civilian public can forget them, as a rule. But just seven miles away, and also on the lake shore, eastward, is Port Clinton, a good fine little city with plenty of banks, stores, hotels, and all that, and a man with a car can go and come from Port Clinton as he sees fit. Living in Port Clinton is practically the same as at home.

There is no garage intended for civilian use at Camp Perry, and only outdoor parking spaces, where you take your own risks about safety of the machine and contents, just as you do when you park the car on any other street. But Port Clinton takes care of all automobile affairs for the civilians. There are plenty of taxi cars, motor busses, etc., available in the camp itself.

There is a branch, temporary but effective, here of the Post Office, and the only address necessary on mail is "John Jones, Camp Perry, Ohio." The same address is sufficient for telegrams. The Western Union has a branch station in camp, so all telegrams must come, or of course go, over the Western Union, as the Postal is not among those present. The telegraph is closed nights and holidays, as the operator occasionally wants some sleep. The post office handles ordinary mail and registered mail but no money orders. There are no banking facilities in the camp. One must go to Port Clinton for banking affairs, except those financial transactions that have to do with camp affairs. If your check is good, the N. R. A. headquarters will cash it in pay of entries to the shooting matches, or will arrange for purchase of government supplies for the civilian, such as a Springfield rifle or army automatic, if one wants to buy such, but on the whole, what may be called more or less private financial affairs must be done at Port Clinton as the nearest point. This of course is right and proper, as the camp does not last long enough to justify a bank on the grounds.

Except the Y. M. C. A. there are no amusements in Camp Perry, such as movie shows, dancing places, etc. Sometimes the Y. M. C. A. shows a movie, just as it offers a band concert, all free. No collections, soliciting, or any kind of panhandling is allowed in Camp Perry. The hat is not passed around for anything.

There are plenty of places to write letters, plenty of places to read and loaf when it is not your turn to shoot, and plenty of clean shower baths, with hot and cold water, free. The camp furnishes only the water, remember, you furnish your own towels and soap. How they do it is to strip in the tent, put on a bath robe or rubber coat, and start a private undress parade. But no one pays any attention to that. How it is done in the Squaw Camp I don't know, not being a brave man, but probably about the same way.

Bathing in the lake sounds nice, but it is practically wading. For nearly a quarter of a mile out from shore the lake is so shallow that at that distance the water, except perhaps a hole or two, is about waist to armpit deep. The Camp is on the shore of a shallow bay on the lake shore, hence the waves are small and the water is usually warm. Children wade and paddle around out about 100 yards from shore, where the water runs from one to not over two feet deep, with practically no waves. Bathing is therefore somewhat a figure of speech at Camp Perry, if you have the roaring surf of the Atlantic in mind. Paddling in a pond is more like it. There are no bathhouses or other beach bathing accommodations, nor does the situation justify such things, and the camp as a whole practically ignores the lake bathing idea. Although there are symptoms of something else, here and there, there is only one thing to do at Camp Perry and that is to shoot.

To the man afar there exists considerable confusion about the railroad service into Camp Perry, the checking of baggage, and all that. This is due, I think, to the unconscious idea that the New York Central R. R. runs along the southern shore of Lake Erie. It does, in a general way, but that does not necessarily mean that one rail is under water all the way from Toledo to Buffalo. The fact is that the railroad sometimes skirts the edge of the actual lake shore, and most of the time runs parallel with the shoreline, but some miles, say from one to ten miles perhaps, inland. This is the case at Camp Perry.

Camp Perry, as I said, is right on the shore of the lake. The New York Central R .R. runs by the camp about two miles inland, back from the shoreline, hence it is about two miles from the main line to the camp. But from the main line to the camp itself, runs a branch or spur, of course two miles long. And parallel with the railroad tracks runs the automobile road, along which run the auto busses from La Carne to Camp Perry. La Carne is the small station on the main line where the spur branches off for Camp Perry, but it is too small a place for trains to stop except a local or two about twice a day. A whistling station, so-called. But seven miles eastward from La Carne is Port Clinton, before mentioned, at which many trains stop, except the very fastest trains, like the Twentieth Century Limited. The Limited does stop at Toledo, however, only thirty-seven miles from Camp Perry, so if one wishes to travel by the Limited he can do so, if he wants to change cars for Perry at Toledo, going either east or west.

But all trains except the Limited, and perhaps one or two other flyers on the New York Central, stop at Port Clinton, seven miles from Perry. Motor busses run to the camp more or less all the time from Port Clinton, fare about a quarter, or one can come by train, if one wishes. In short, once get to Port Clinton and you are practically at Camp Perry. So no need to look up exact schedules to Camp Perry direct before leaving home, just figure on Port Clinton, Ohio, and you will land in Camp Perry all right. As to baggage, check all baggage from home to Camp Perry direct, if your ticket reads that way, and you will find the trunks and warbags in the New York Central's neat little station right on the campgrounds in due time, often even before you arrive. And you can check from the station in Camp Perry itself directly home without any fuss and feathers whatever.

In short, to sum up, Camp Perry is on the actual shore line of Lake Erie two miles north of the jerkwater station of La Carne on the main line of New York Central R. R. from which station (La Carne) a local train runs back and forth several times a day. That is all there is to it.

I go into all this at considerable length, because I am an old traveller, and I could not get very definite information about it all—such as I have tried to put down here in plain "United States"—even at the main ticket offices in Denver, which is a more or less civilized city. At least it, Denver, is an eastern city located on the Platte river in Colorado and is supposed therefore to be heap civilized, but the ticket agents could not tell me much about getting to Camp Perry. I hope I've done better here. No copyright on this either, Personally. I had to change cars at Toledo, but that took me only five minutes and ten steps, all in the same station, by the way. I checked trunks from Denver to Toledo, and rechecked them at Toledo direct to Camp Perry, where the United States Government Itself completed the job by heaving them into a big army truck and dumping them at my camp door, safe, sound, and with despatch—no charge.

This is my first trip to Perry, and I assume that John Smith of Somewhere wants to know just about what I wanted to know about the place. Somehow the impression had grown into my skull that *(Continued on page 19)*

The American Rifleman

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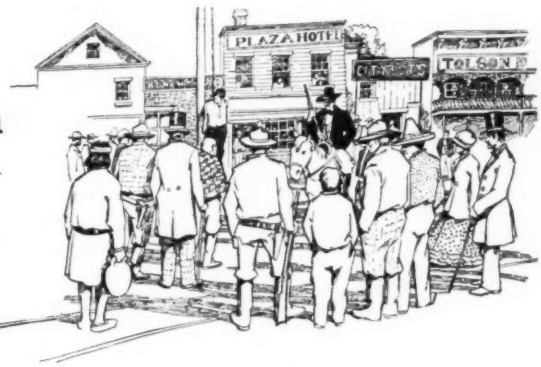

• VIGILANTES. 1851. •

In the year 1851 San Francisco still in the boom of the Gold Rush, was the mecca of adventures good and bad. It was a wild town, full of wild men and wild women, drunk with gold and hope of gold. When Marsball found his nugget the world flocked to California in '49—Swedes, Spaniards, Russians, Germans, French, British, every race of the globe, were there in dire poverty and unheard of wealth. People were gold mad. Prices raised enormously. There was no currency to speak of, only "dust." Lumber cost $1.50 a foot, bricks were $1.00 each. A man who had purchased a lot for $15.00 the year before came back to sell it for $40,000.00.

The city was full of miners, gamblers, thugs, preachers. Sydney Town "over near Clark's Point" was a den of ruffians from New South Wales and Van Deiman's Land penal colonies. The "Hounds," a criminal brotherhood held the city by the neck. Sheriff Moore of Auburn was murdered by a man named Stuart, alias Tom Burdine, who was held responsible for the great fire of May 4, 1851. Citizens who had anything to lose walked in the middle of the street after nightfall with gun drawn. It was a dizzy life.

The Committee of Public Safety, formed after the great fire episode, had not yet become too militant.

Then came John Jenkins, a "Sydney Cove." Jenkins broke into a store, killed the clerk, took the store safe (an unheard-of luxury) and escaped with it—almost. He got it down to the water front and into a boat when he was discovered. He refused to abandon it and was caught and lodged in the Vigilance Committee Rooms in the Monumental Engine House at Bush and Sansome Streets. Five hours later he was hung in Portsmouth Square by 200 vigilantes under Sam Brennan, and the world was "safe for democracy," such as it was.

NO rifleman can fail to be interested in the claims of General Mitchell as to the supremacy of the forces of the air for if such claims are true the art of rifle shooting must take its place alongside of archery and golf as a means of National Defense. No riflemen's organization can afford to ignore the statements which are continually appearing in the press as to what, where, when and how the airplane renders this country either free from or subject to hostile attack.

Who Is Right?

THE AMERICAN RIFLEMAN takes the stand that the air services are what they have proved themselves to be in actual war; i.e., a vital part of our armed forces for defense. More than that we are unable to see at present.

THE AMERICAN RIFLEMAN takes pride in both the Army and Navy Air Forces. Somehow or other we believe that they are just about as good, plane for plane, as the air services of any other nation, and if they are not larger and the equal in numerical numbers of air forces of other nations, it is because Congress has not appropriated the necessary funds.

If the condition of the Army Air Service is as deplorable as General Mitchell would have us believe, we would like to know just how much of the responsibility for this condition is his for it must be remembered that he was Assistant Chief of Air Service for the past six years. He places the shortcomings of the Air Service on the broad shoulders of the General Staff, but this is similar to the cashier of a bank attempting to pass the "buck" to the bank directors as to the sad condition of his own office.

General Mitchell is for a separate and united air force, free from the control of the Army and Navy. He cites the recent disasters of the air as caused by the present system. How ridiculous! England, France and Italy all possess different systems, and England has the vaunted separate and united air forces, and yet each and every one has had disasters in the air as serious as any we have had over here.

We cannot picture General Mitchell as a martyr. He understands the powers of publicity too well to suffer martyrdom. All he wants is a separate and united air force, but, of course, he would not, under any circumstances, consider himself as its head. He is too modest and shrinking a man for such a position.

THE AMERICAN RIFLEMAN believes that the disasters in the air are not due to any system or lack of system, but to the inherent weakness of air defenses. We are not convinced that man is yet master of the air. We think too much of our country to risk all on a defense which may be shattered by a storm. We still think that the most dependable defense in fair weather and foul is that celebrated rifleman, the American "doughboy." On rainy and foggy days in the World War it was the "doughboy" and so it will be in the next.

We need not look very far for the powerlessness of the airplane in war against real riflemen. France, the greatest exponent to-day of air power, is conquering the Riffs not by airplane but by the so-called old-fashioned methods of war, including the use of riflemen along the line of the Indian fighter of our frontier days. The airplane as the allround "cure-all" has failed in Morocco. As a vital part of the French forces it has succeeded, for the French airmen have performed invaluable services in reconnaissance work, and have been able to prevent the Riffs from collecting large supplies of troops, food and munitions.

General Mitchell claims that the airplane has demonstrated its ability by actual test to sink the largest and most powerful battleship it is possible to conceive. It has done no such thing. It has merely demonstrated what was already known, that explosives will sink a battleship. No battleship has ever been sunk in war by a bomb from an airplane. The battleships sunk in the bombing tests were not moving; were not armored against bombs;

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were not "modern or most powerful battleships;" and were not fighting back.

General Mitchell states that anti-aircraft fire is harmless against aircraft. This is not true. Anti-aircraft fire in the World War did bring down planes. In the World War aviators were occasionally hit at altitudes over 13,000 feet, and there was one instance of an aviator badly wounded at nearly 16,000 feet.

General Mitchell derides the recent anti-aircraft tests as showing the futility of such fire. But what were the anti-aircraft guns firing at? Were they firing at a full sized airplane? They were not. They were firing at a piece of cloth towed behind a plane, and this cloth under the firing conditions is only about one yard high. It is so small as to be virtually invisible, while at the same time the plane in comparison is as large as the proverbial haystack.

Thus we see that target practice with the airplane and bomb in time of peace is at a full sized target under the easiest of conditions, while target practice for the anti-aircraft guns is on a virtually invisible target much smaller than the war time target.

The use of airplane machine gun fire against determined riflemen is a joke, but the French airmen have found it no joke in Morocco. Riflemen at Perry during the National matches of 1920 saw what planes could do against ground targets. The only really successful plane was one which came so close to the ground that it lost its landing gear, and the only hit of consequence it made was when the plane itself hit the target by flying through it.

General Mitchell attributes the woes of the Air Service to the fact that non-flyers direct the flyers. On this basis Congress could not make laws unless all Congressmen were members of every profession, including bootlegging. The Aircraft Congressional Committee should have all been flyers if General Mitchell's policy were carried to its logical conclusions. As a matter of fact the Air Service is by far the most independent of all branches of the Army. No non-flyer has the authority to make a flyer take off under conditions not fixed by the flyer.

General Mitchell himself does not hesitate to extend his remarks to things outside of his own province. He poses as a Naval expert and freely gives advice as to the conduct of that branch.

We do not believe that General Mitchell has a corner on either the patriotism or the brains of the country. We somehow cannot feel that all the Army and Navy officers are wrong and only General Mitchell right. Of course, he says the officers are muzzled and won't tell the facts to the world. The only muzzles that officers have is an innate sense of honor, and naturally they do not spring to General Mitchell's defense since his facts and the real facts are at such a variance.

In conclusion THE AMERICAN RIFLEMAN wishes again to make its position clear. By all means let us build up an air force, but do not let us depend upon hot air. Let us keep our feet on the ground and our powder dry.

Oh Gosh!

By C. C. Finn

THOSE "bargain sales" of the American Rifleman and other magazines make me kind of weary when they have the most attractive bargain of all at their elbow and a wonderful example of how it works out right in Washington, D. C. Have written about this several times before and never got a rise; maybe now that they are used to printing my ravings this may get through and the members get a chance to express themselves. What am I talking about? Well, might be a good thing to mention that although lots of writers are able to use up a whole page and never tell. Anyway, THE AMERICAN RIFLEMAN and membership in the N. R. A. should be one and inseparable—if you took one you ought to get the other whether you wanted it or not. The National Geographic Society, which is honored by having me for a member, gets away with it and gets away big. My idea is to make the N. R. A. dues $3.00 per year; anything over eight months to constitute a year and any amount under eight months to constitute a part-year and cost $2.00. With this will go the RIFLEMAN, part and parcel, wedded, etc. The advantages are numerous. The gent who takes a membership just to get a rifle will have to help out the magazine and reading the magazine may make a real member of him. Second, those who are interested only in the magazine will have to help out the N.R.A. and those who are interested only in shooting will have to help out the magazine, each will help to make the other bigger. Third, when the N. R. A. has something to say in the RIFLEMAN it will be able to talk direct to every N. R. A. member and save a lot of postage which now goes into circulars. Fourth, the advertising value of the RIFLEMAN space will immediately increase. Fifth, it is a distinct effort to get a man to get a post office order or write a check; to pay his dues and subscribe to the N. R. A. now requires two such efforts and by reducing the effort to one more results should follow. I would like every member who likes this plan to write the RIFLEMAN a post card or a four-page letter or a telegram or something and likewise those who don't like the idea. Most of those who don't like the idea don't get the RIFLEMAN *now*, anyway, so they will never know about it and won't object.

I'm mighty disappointed in E. A. Price and even John, who eats raw meat for breakfast and thirsts for blood, feels that we should have gotten more for our money. Gosh, we expected that man to break an automatic and triumphantly show us that we were old and useless and all he comes back with is a tale of defective cartridges and rust; something we all know about. Do you suppose he really thought that John was on the way East to massacre him? Honest, John wouldn't go East on any pretext whatever for fear he would miss some of our climate and he is too busy trying for five times on a can to kill anyone. Tell Price that he bounced back too far; we can give him lots of good news about the .45 auto.

Did you see the "Lost World?" If you didn't, you should. Gang of gents go into the wildest parts of San Bernardino County, Cal., I think, and find a mesa all filled with the wildest and ancientest animals you ever had a nightmare about. Suarases of all kinds Dina and Boonta and winged lizards and Billy Bryan's great-granduncle, etc. They take a lot of Winchesters to slay this heavy game and one gent in particular has one of these across-the-chest bandoliers filled full of three kinds of cartridges of which the most prominent cartridge is either an old .50 Sharps or a .375 Magnum; anyway a whale of a big cartridge. The rest of the bandoliers seemed to consist of .30-30 and a few .30-'06's for luck. The Dinosaur (hope that is the right spelling) they are after is one hundred and ten feet long and wide and high in proportion, filled from end to end with a mean disposition but with a neck and head about a foot through. They shoot him right on the bean with the whole arsenal of Winchesters and don't even make him itch, showing that the penetration of bullets in prehistoric times was pretty bum. The Hero of the gang, him with the mixed bandolier, what does he cuddle in the crook of his strong left arm, ready to let the light of day through almost anything? Mind you he has lots of the biggest cartridges right where he can get them and he carries a M. 52 Winchester, no less. Suppose he has a pocket full of N. R. A.'s somewhere but they don't show in the picture. They also stage an exhibition of comparative ballistics which is a dandy. Finding that their cartridges won't slay the Saurases the heavy gent with the beard and beetling eyebrows rigs up a stone thrower and for a demonstration the comedy gent gets tossed in the contrivance some fifty feet. The comedy gent weighs about one hundred and twenty-five pounds, ringside and he lands with a remaining velocity, in a mud puddle, of less than ten foot seconds—to give him all the best of it as a projectile. At the best, then, he strikes with 1,250 foot pounds and would, if he were a rock produce a contused wound of great superficial area but of little import whereas the grand, big cartridge in the front of the bandolier, if fired in some other gun besides the M. 52, would strike a blow of some 3,000 foot pounds and should make some impression on a beast, prehistoric or otherwise, even if armoured with a quarter inch of our very best boiler plate. At that you ought to see the picture.

Outside of that I note Captain Askins is worrying about the game becoming extinct and proposing that hunting licenses be issued only by Dunn and Bradstreet's and out here the farmers are kicking because the elk come in and eat the strawberries and chase the cows away from the hay. Guess we will have to come down to hunting rats and mice. Once a pair of gents were hunting and one of them was much perturbed to note that they were being followed by a skunk. The other said,

"it's all right for him to follow but when he starts to go away, let me know." This story doesn't mean anything, I just chanced to remember it. If the hunting is going, let 'er go. Every acre of land put under cultivation cuts off just so much winter feed and it will finally get down to where the wild land will support about so many animals and they can be increased to the extent of the winter feed at any time; we can prove that in the Olympic Mountains where the elk have gotten beyond their winter feed right now. We can put up some deer target and reward the lucky hunter with a nice ham or a can of corned beef; seems as if that is about all they get out of a deer now when the new bullets get through and it will save the hunter all the butchering and packing.

More About Game Bullets

(Continued from page 4)

pierced. No expansion is undesirable because of the small unfired diameters of the bullets in these loads, and disintegration is undesirable in heavy game because it is usually accomplished by poor penetration.

In the .30-'06 cartridge loaded with a 180-grain bullet at approximately 2700 F.S. we have a cartridge which is, in principle at least, ideal. The initial bullet area is too small for effective killing but the bullet is designed to expand to a suitable diameter upon striking flesh. The point of the bullet is worthless for game shooting, before being fired, but is designed to flatten-out to an excellent shape upon striking an animal. The length and shape of the bullet are admirably adapted for great penetration and the velocity is sufficient to give great shock. And, although only effective velocity and penetration are present in the bullet when it leaves the muzzle, this cartridge is growing famous as a game load because, on the proper sort of game, it acquires bullet area and outline of a killing sort in addition to its velocity and penetration.

The bullet with which this cartridge is loaded has a jacket of sufficient thickness and an exposed or hollow-pointed tip of sufficient smallness so that premature expansion does not occur even in very heavy flesh. In this part of a bullet, all of the designer's skill is needed. If too thick and hard a jacket is used, and if the expanding tip is too small, the bullet is not likely to open well in paunch shots on large game or on any light game. If, on the other hand, the bullet is made so that it will surely open when piercing flesh having very little resistance, it may fail to properly penetrate the heavy bones and muscles of really tough game. Perhaps the surest way for such a bullet to be designed for expansion is for the thickness of the jacket to be graduated. With a jacketing of very thin metal at the tip of the bullet, sure expansion will be secured on really soft game and, with the jacket of very thick metal at the base, at least a part of the bullet will drive through even the toughest muscles and bones of any animal on which the .30-'06 can be used with entire safety.

But, because the unaccountable so often happens in shooting, the surest game loads are those which afford the least opportunity for chance to interfere with the operation of even the best designed bullets. The ideal bullet, in my mind at least, is one which is sped with sufficient velocity to acquire a good share of the undoubted killing power which velocity imparts to a bullet, acquiring at the same time the better hunting accuracy which a flat trajectory insures. The bullet should be so designed that good expansion will be guaranteed, but should possess sufficient cross-sectional area before being fired that, even if expansion should fail to occur, enough bullet area is present to make for quick killing. The point of the bullet should be so designed that it can be readily mashed out to great flatness, upon striking game, but it should be sufficiently blunt before being fired that, even if it does not change its shape upon entering flesh, the bullet shall still have the advantage of a blunt point. Penetration should be guaranteed by good sectional density, by a sufficiently low velocity so that breaking-up will not occur upon impact with bones of great hardness and thickness, and by the bluntness of point and thickness of bullet which precludes the possibility of a projectile being bent or twisted too much.

Cartridges actually exist which possess all of these desirable qualities. Read again the preceding paragraph and then consider the .33 Winchester, the .35 Remington Auto., the .405 Winchester, the .400 Whelen, the .404 Magnum, and almost all the whole line of heavy, double express cartridges. We have heard, all of us, of men who have honestly claimed that the .250 Savage is the finest American game cartridge made, and of others who, in the light of unfortunate experiences, will never again carry a rifle chambered for that cartridge. It so happens that, just at this time, I have neither a .33 Winchester nor a .35 Remington among a whole wall full of guns. But I must honestly admit that, for their recoil, I do not know of a surer deer cartridge. And one must travel far and meet many before he will find a really experienced hunter who will deny their great effectiveness on this game.

In almost every outdoor and shooting publication one may pick up, he finds someone claiming that some cartridge or other is as good or a little better than the .405 Winchester. Why? Simply because no other cartridge of equal recoil has established a better record of unfailing reliability on all game. There are many cartridges which, at their best, can equal this American standard of comparison, but one must turn to a rifle which kicks more—to the .400 Whelen or .404 Magnum, perhaps—before he can find a rifle which, with every sort of a hit on every sort of game, will excel it. And, finally, when all of the soap and steel shooting is terminated and the results are duly discussed, the best way to judge the killing power of a good game rifle, outside of much shooting at game itself, is for one to pick a cartridge possessing all the characteristics which have made the .35 Remington and .405 Winchester reliable—and then to judge by how much the gun kicks.

Camp Perry

(Continued from page 16)

Camp Perry was very, very warm, a sort of free public Turkish bathhouse, especially at night, and that it rained all the time when it was not sprinkling. I have been here now just two weeks, and on the whole it has been Colorado weather. Colorado weather except that the air feels "sticky," that is, damp, to a man dried out about thirteen years in the arid West. I lived off and on fifteen years along the Hudson River, and Camp Perry has about the same weather, the same general climatic conditions, as the Atlantic seashore has. Warm sometimes with three sweating days in the two weeks, but seashore coolness at night, with some of the night even chilly to cold. I have worn a five pound sweater nights here several times, and slept only one night in two weeks under one blanket. Most of the time two army blankets, and some of the nights along toward morning, I pulled up the third one. The government sees that you get all the bedding you want within reason of course, but when you come next year better bring the following layout:

Your usual shooting clothes, rubber or oil coat, rubber boots or at least rubbers, extra sweater or heavy coat, and slippers to use around camp. Bring a fly net, as there are some flies, not bad though, and on the warmer nights a few mosquitos. And by "few" I mean few, not many, perhaps three or four during the evening, blown into camp no doubt by the wind, as the camp itself is drained and policed and kept too clean to breed flies or mosquitos.

Now if you get sick? No better medical attention in the world. Free, too. If you are planning to enjoy a sprained ankle, a bad bellyache, or a broken back, no nicer place in the world to do it in than Camp Perry. Cheap, too. All you have to do is to get sick and do as the Doctor says and they attend to the other details. If the tooth gets off the reservation and gets to jumping hot and high, Dr. Fanggrabber will attend to that all right. He may not present you with a set of gold plates of course, but you won't have to howl with the toothache among deaf strangers. In short, at Camp Perry, women and children too, you are better off medically than in most small and medium-sized towns in America. Mending men is a habit with the U. S. Army doctors, and they can cure everything curable except a broken heart.

NEW DEWAR RECORD

As we go to press a telegram received from Camp Perry advises that the United States Dewar Team again established a new record for this match by making the phenomenal total of 7,792, which is 13 points higher than last year's record breaking score of 7,779. In addition to breaking the team record, Mr. E. F. Shearer established a new high individual record of 398, which is one better than Sergt. Shriver's last year's record of 397. The British do not fire their scores until Sunday, September 20.

"Straight-Line"

(Continued from page 12)

load any shape, length, or style of .45 handgun cartridge, including the .45 ACP, without changing or using extra parts.

Now we come to the nucleus of this article —"straight-line." This year I began using a straight-line reloading tool that has taken much of the "load" out of handloading. This particular straight-line tool is known as the "B & M Model 24" and is featured by the firm of Belding & Mull, Phillipsburg, Pennsylvania. Like the Bond, the B & M is a combination multi-caliber tool operated with a lever. But right there the similarity in qualification ends. The straight-line Model 24 is of about the same weight as the Bond and may be operated held in the hands, but provision is made, in the form of three screw-holes in the base to which the handle is hinged, for fastening the tool to wall, table-top, or work-bench, and making it in effect a light bench-tool. Thus, with only one hand needed to operate the lever, the other is left free to manipulate the cartridge cases, and the first step in speeding up handloading is accomplished.

The tool is built to last a lifetime. Fastened to the heavy lever-base is a smoothly-polished steel rod, ½-inch thick, which is the backbone of the tool. The heavy head-cradle, cut from a single block of steel, slides up and down along this rod, being actuated by the up or down stroke of the lever-handle. The length of this rod determines the length of the tool and the type of cartridge to which it is adapted, these being divided into but two classes: tools for the Krag, .30-06, and Ross type of cartridge, and another tool-length for short cartridges like the .32-20, .25-20, .38-40, etc. The head-cradle is notched with a semi-circular depression to fit the contour of large cartridge-case bodies, and is cross-slotted to accommodate the shell-rims. There is a plate provided to be slipped into the notch when rimless shells are being used. This gives a very secure grip on both types of cartridge heads, since half the shell-circumference is engaged. Thus, the same head-block is suited to a wide range of calibers, both rimless, and those with rimmed heads. Its motion is kept to a straight-line by the ½-inch rod which pierces it, and is kept from twisting or turning by the guide-punch which runs through it, parallel with the rod. For the other, or lower, end of the ½-inch rod three interchangeable blocks are provided, one holding, the hinged decapping-shank, another the expanding-plug and reducing-die (in-one), and a third, a clamp-form bullet-puller for dissembling or taking apart war-time or undesirable ammunition without marring any of the components. These blocks are pierced to fit the ½-inch rod very snugly and are fastened by means of a strong square-headed set-screw. Auxiliary brass plugs are used to cushion the imprint of the set-screws and to protect the polished surface of the back-bone rod.

In decapping and repriming fired cases, the block with the decapping shank is adjusted to the lower end of the heavy rod, and the priming-punch is substituted for the guide-punch in the head-cradle. Now, draw the hinged decapping-shank towards you and place a cartridge case over it, then shove it back, seeing that the rim engages with the slot in the head-cradle. Now bring the lever down, which forces the case down over the shank, and the pin pushes out the old primer. Because it works in an automatically and absolutely controlled straight line, there is no fussing around to find the flash-hole, for the machine takes care of that EVERY time. Now, leaving the case on the decapping shank, place a primer on the primer-pocket and raise the lever. This pulls the cartridge-case and loose primer up against the stationary, screw-held priming-punch, and the primer is shoved home ALWAYS, and accurately, to the right depth. Thus, both decapping and repriming are taken care of with one adjustment of the tool, a single placing of the cartridge-case, and by one full-stroke of the lever, up and down. This blending of the two operations makes the work easy and speedy; both operations being accomplished quicker than repriming alone in the old-type tools. The punch-pins are made of better steel than is usual, and are positively held to the shank by a deep-threaded holding nut nearly an inch long. Because of the accuracy of the mechanically straight operation of the tool, there is very little danger of breaking one of these B & M punch-pins, and it makes for versatility. After setting up for the Krag case, I decapped promiscuously the cases of a number of calibers, including 30/30, .45 Colt, .38-40, .410 ga. and .45 A.C.P.

The resizing operation, likewise, requires but one adjustment of the tool, and but a single full-stroke of the lever. The down-stroke forces the case-neck in to the reducing die to a uniform depth; and, on the up-stroke, the neck is pulled over the expanding plug in the same die. Since it is in an absolutely straight-line, the job is performed much more accurately than with the older type of tools. Case-necks are, therefore, necessarily resized uniformly at every point, clear around, and there is no difficulty over extraction, thanks to the firm grip of the head-cradle on the cartridge head. Besides doing the job better, it is quicker, and I find I can resize long rifle-cases in the B & M tool about as fast as short revolver-cases in the older type of tool.

With the Bullet-Puller head I have broken down different factory cartridges to examine and weigh their components. Because the clamp is correctly concaved the bullets extracted are not marred in any manner, and, due to the straight-line of the force exerted upon the cartridge by this operation, the case is not sprung or bent to the slightest degree. After these components were reassembled in the B & M Bullet-Seater they appeared the same as the regular or original cartridge, and shot with apparently the same accuracy as the untouched factory cartridges from the same carton. This was due to the straight-line operation of the B & M Bullet Seater.

The tool for bullet seating is a separate device. It consists of two major parts, the chamber and the head-piece. The head-piece is threaded for the seating punch or plug, and, after it has been adjusted for length, it is locked by means of a heavy lock nut, while held by a small retaining screw and lock washer. The chamber is almost the same inside as the chamber of the rifle in which the finished cartridge is to be fired. A hole of the bullet diameter leads to the top end of the tool, into which the bullet is dropped, base first, and shoved down by means of the seating-punch fastened to the head. Since the seating-punch fits this same bullet-channel snugly and is concaved for the bullet nose on the end, the bullet cannot be seated wrong, for it is at all times held in a true straight-line with the axis of the cartridge-case in the chamber. The force may be applied to the head-piece with the palm of the bare hand, or it may be tapped down with a light wooden mallet. For seating bullets in those cartridges which are to be used in tubular-magazine rifles, a crimping shoulder is provided in the chamber to crimp the shell-lip into the crimping-cannelure on the bullet.

Though absolutely accurate, this B & M device is purposely simple enough to suit any shooter's pocket-book. The resized and re-primed case is charged with the powder-load and inserted in the chamber. The cylinder is then set, base down, upon a block of wood or the work-bench, and the bullet is dropped into the hole at the top. Then the seating-punch is inserted in the hole and tapped down with light blows until the bullet is seated to the proper depth in the cartridge. By my own timing, I can seat Belding & Mull gas-check cast-bullets in the Krag case as rapidly with the B & M Bullet Seater as regular .45 Colt bullets in the old type lever-tools. These various B & M Straight-Line tools solve the handloader's problem and his greatest concern of finding a practical means for assembling his cartridge components in a straight line is adequately met. No matter what you have been using, once you have tried these tools you will never be without them.

Marksmanship and Game Conservation

By Charles H. Chapman

I wish to express my high appreciation of the courageous and straightforward article on game preservation by Captain Charles Askins in issue of August 1st. He speaks the truth with no uncertain sound when he says that the Rifleman is the only sportsman's organ in America in which such an article could be published, and might we say that Captain Askins stands very much alone in the position of one who has the courage to write such a one. The Captain's proposed remedies are drastic, but not too much so in view of the desperate situation of our wild life.

One remedy which he does not touch on sufficiently is that of education of the shooting public to differentiate between shooting and hunting, between marksmanship and game murder. Many of us realize, as we grow older, that we hunt to shoot, not the reverse. That is, our enjoyment lies in the skill and marksmanship afforded in the taking of the quarry, not in the acquisition of so much meat for the table or market. If we can separate the pleasure of attainment from wanton destruction, we will be far on our way to adequate conservation of our natural wild life. Wild life photography is one means to this end; target shooting in all its varieties is another.

It behooves us to search for more methods of sport consistent with conservation and to educate our wilderness seekers therein.

The idea that marksmanship and game destruction are interchangeable and interdependent terms is altogether too common. For example, the greatest nation of riflemen, per capita percentage, is Switzerland; but the idea of the tourist swarming Alps as a great game country provokes an audible smile. Our American Indians have always been great hunters and successful ones, but their reputation as marksmen with any firearm is certainly not high. Marksmanship is one thing, and game destruction is an entirely different thing. Let us try to separate them from the close association they now hold in the public mind. We can get along without game shooting. We are long past the stage when our wild game represents a food supply. We can enjoy all the pleasures of woods and waters, of mountains, plains and rivers, without killing all the wild life that we find there. But we need our marksmanship.

We are not a nation of riflemen, but we ought to be. We will never have more than a skeleton of an army or a high class, little model of a navy, because our people have just that Anglo-Saxon bump of self conceit, that America—*i. e.*, themselves *in toto*—can lick all creation single handed, at any time or in any way.

And so they can if they will only give themselves a chance.

I believe in peace, I want peace, all the time, now and forever.

But I want the kind of peace that comes from respect, not contempt. With our enormous wealth at this time when every other nation is groaning in poverty, there is only one thing that stands between us and the grasp of an alien conqueror; and that is the dread of our man power. Remove this and how long before Russia, Turkey, Japan or some other power would be bombarding our gates?

Every citizen a rifleman, every rifleman a potential soldier.

A small army and navy in the first line, a big National Guard in the second and every other citizen that can lift a rifle in the third and last. That will be some guarantee of a safe, honorable and everlasting peace.

In the meantime, game or no game, let us keep on shooting.

Sea Girt Matches

By Col. Wm. Libbey

THE Thirty-second Annual Sea Girt Inter-State Tournament was held between August 31 and September 10. Sea Girt weather was at its best and the elements did little to disturb the progress of the matches—the few dashes of rain did not materially interfere with the program.

The attendance was about one-third of previous years, but enthusiastic; but those who knew the Sea Girt of former days with the ranges going to capacity, missed the stir of the occasion and the constant rattle of the rifle fire.

The cause of this slight interest in the king of sports is hard to explain, whether it was due to the matches at Camp Perry going on at the same time or the lack of enthusiasm on the part of the various military units of the State it is hard to say.

Certainly the absence of the Service Teams was seriously felt, and the lack of teams from the nearby States contributed in a slight degree to a feeling of disappointment.

The small bore matches attracted a few outsiders among whom the representatives of Frankford Arsenal were conspicuous. The presence of the 18th U. S. Infantry detail which provided the scorers and markers and some entries in the matches added a touch of outside influence which was appreciated. The service rendered by this organization was as efficient as it was welcome. The shooting while good and the competition while keen, did not however come up to the standard of many previous years.

One new record was established when Mr. R. H. Lummis of the 71st Regiment N. G., N. Y. Veterans' Association and of the old Guard of N. Y., in the Souvenir Match at 200 yards, prone, placed sixty-six consecutive shots in the bull's-eye. It might also be added that his two sighting shots were also bull's-eyes.

The usual "post mortem" groups assembled at the regular noon and evening sessions of this eager and gifted set of competitors for honors in the shooting world—but so far as heard from no decisions of importance were reached.

The winning scores in each match are appended.

EISNER NO. 22
10 entries. Eisner uniform.

	Score
Sergt. Frederick Pauch	93

GOULD RAPID FIRE NO. 13
13 entries. Trophy and medal.

Lt. J. V. V. Schoonmaker	99
High N. G. score by Corpl. N. T. Ettinger	89
High Civilian M. W. Sargeant	82

COMPANY TEAM MATCH NO. 7
Five entries. Peter's Trophy and medals.

Company G. 113th Inf. N. J.	534
2nd Co. A. 18th U. S. Inf.	530
High Civilian East Orange Rifle Club	

CAVALRY TEAM MATCH NO. 10
Five entries. Cup and medals.

Troop B. 102d Cavalry, N. J. 1st team	343

READING MATCH NO.23
Medal

M. W. Sargeant, Orange Rifle Club	48
Second, Arnold Wullschleger.	

HAYES MATCH NO. 17
23 entries. Medal

Lt. J. V. V. Schoonmaker	49
High civilian, M. W. Sargeant, E. O. R. C.	46

MEANY MATCH NO. 18
11 entries. Medal

M. W. Sargeant, E. O. R. C.	48
Next high civilian, M. J. Kerrigan, 13th Rgt R.C.	46

ALL COMERS EXPERT MATCH NO. 21
27 entries. Medal

Corpl. Paul F. Duyer, 113th Inf.	50-5
Closely followed by Sgt. G. C. Smith, Jr. 113th Inf.	50-4
High civilian, M. J. Kerrigan, 13th Regt. R.C.	48

GOVERNOR'S CHAMPION MARKSMAN MATCH NO. 29
38 entries. Handsome medal

1st Sgt. F. J. Muller, Troop B., 102d Cav., N. J.	234
He and Sgt. F. Pauch with 233 were the only ones to qualify as experts in this course.	

VETERAN ORGANIZATION TEAM MATCH NO. 8
Five entries

71st N. G. N. Y. Vet. Association	296
Only four points dropped in the course. George Corwin made one of the possibles.	
Second, 3rd W. J. Vet. assoc.	281

N. G. COMPANY TEAM MATCH NO. 31
13 entries. Match well covered by trophies.

Troop B. 102d Cav., N. J. Trophy and medals	1138
Second Company B. 114th Inf. N. J. Trophy and medals	1105
Third, Company G. 113th Inf. N. J. Trophy and medals	1096

A feature of the day's shooting was the shooting of R. H. Lummis of the 71st Regiment N. G. N. Y. Veterans' Association. In the Governor's Match at 200 yards, prone position, he made 66 consecutive bull's-eyes. His two sighting shots were also bull's-eyes. Thereby setting a world's record.

SMALL BORE LONG RANGE MATCH NO. 37
16 entries. Medal.

George M. Sittler	98

SHORT RANGE MATCH NO. 34
14 entries.

O. P. Floyd	5V's 99
G. M. Sittler	4V's 99

EISNER 100 YARD MATCH NO. 35
15 entries.

Charles N. German	5V's 98

SEA GIRT NATIONAL INDIVIDUAL PISTOL MATCH NO. 28
8 entries.

Lt. L. F. Page, Howitzer Co., 113th Inf.	255
High N. G. and R. C., Capt. Henry Stricker, Jr., Co. C. 114th Inf.	207
High civilian, M. D. Frisbee Old Guard N. Y.	218

GADLER MATCH No. 4
3 entries. Trophy.

N. J. State Team	1655
High civilian, East Orange Rifle Club	1611

DRYDEN TROPHY MATCH NO. 5
3 entries. Trophy.

N. J. State Team	1049

N. R. A. SMALL BORE MATCH NO. 36
12 entries. Medals.

Floyd T. Oswald	4V's 98
Second, R. A. Turner	2V's 98

COMPANY TEAM PISTOL MATCH NO. 33
4 entries. Medals.

Troop B. 102d Cavalry	77.6%

NO. 32
12 entries. Trophy and medal

Sgt. Lawson F. Page, Howitzer Co. 113th Inf.	92.6%

SHORT RANGE RE-ENTRY MATCH NO. 41
58 entries. Best three targets.

Charles N. German	99-98-99—296

MID-RANGE RE-ENTRY MATCH NO. 42
65 entries. Best three targets.

L. J. Miller	99-99-97—295

SMALL BORE LONG RANGE RE-ENTRY MATCH NO. 43
40 entries.

George N. Sittler	8V's 50

INDIVIDUAL SMALL BORE DRYDEN NO. 39
16 entries. Medal.

L. J. Miller	223

SEA GIRT SMALL BORE CHAMPIONSHIP NO. 40
16 entries. Medal.

L. J. Miller	246

INTERSTATE REGIMENTAL TEAM MATCH NO. 6
3 entries. Briggs Trophy and medals.

18th U. S. Infantry	749
High National Guard, 113th Infantry	743

NEW JERSEY REGIMENTAL TEAM MATCH NO. 30
3 entries. Columbia Trophy and medals.

113th Infantry	2349
Russell Trophy to 114th Infantry	2323
Dungan Trophy to 113th Infantry	2349
2nd N. J. Trophy to 114th Infantry	2323

SEA GIRT NATIONAL TEAM MATCH NO. 3

N. J. State Team	2341

TWO MAN TEAM MATCH NO. 9
7 entries.

Won by—	
Sgt. G. D. Shiver and Sgt. J. M. Cassady	140
High civilian team—	
C. W. Vickers and M. J. Kerrigan	124

SEA GIRT NATIONAL INDIVIDUAL MATCH NO. 11
13 entries. Prize.

Sgt. Frederick Pauch, 114th Infantry	265

NEVADA TROPHY MATCH NO. 2
18 entries. Medal.

Sgt. H. L. Sykes, 102d Cavalry	135
High civilian, M. J. Kerrigan, 13th Rgt. R. C.	128

SEA GIRT CHAMPIONSHIP MATCH NO. 12
21 entries. Medal.

Lt. J. V. V. Schoonmaker	179
High civilian, W. B. Metzger, E. Orange R. C.	166

SWISS MATCH NO. 15
9 entries.

W. B. Metzger	39
High civilian, M. W. Sargeant	9

ALL COMERS SHORT RANGE MATCH NO. 19
13 entries.

L. J. Miller, Frankford	7 hits

Notes on the Empire State Small Bore Shoot

October 10-11-12th, 1925

ON August 27th, an enthusiastic meeting was held in New York, by the Small Bore Committee of this shoot, during which much constructive business was transacted. This Committee has been formally approved by the New York State Rifle Association, and each man is now a member of that association.

The dates October 10-11-12th, comprise a Saturday, Sunday and Columbus Day, which falls on a Monday. The matches are so arranged that a shooter can get away early during the afternoon of Monday, in order to reach his home that evening. Also Saturday morning has been used for reentry matches only in order that the late ones may not miss the 50 Yard Match, which falls in the afternoon.

The iron sight men are amply taken care of, and each match consists really of two matches, a scope match and an iron sight match, with separate entries and prizes for each. In this manner we hope to see many of the iron sight men who heretofore have stayed away from matches feeling that they were going to be outclassed by the scopes.

The schedule of matches as finally approved, is as follows:

Saturday: A. M. Reentry at 50-100-200 and 300 yards. P. M. 50 Yard Match—20 shots. Reentry at all ranges open.

Sunday: A. M. 100 yard Match—20 shots. Reentry at all ranges open. P. M. 200 yard Match—20 shots. Two Man Team Match—50 and 100 yards. Reentry at all ranges which are open.

Monday: A. M. 300 yard Match—20 shots. Reentry at all ranges. P. M. Swiss Match at 300 yards. Reentry at all ranges.

Sighting shots will be two at all ranges, and fouling shots will be allowed.

The Grand Aggregate, will be made up of the 50-100-200-300 Matches, and will be called the Empire State Championship, Small Bore. The winner will receive handsome prizes, and a brassard which he may wear as an emblem, in later years, of how good he used to be. We believe this to be the fairest aggregate yet established in the small bore field, consisting of an even number of shots at each range.

All targets which win, will be posted that they may be clearly seen by competitors, and so that there may be no question about the fairness of the scoring by the officials. In these matches our best friend will get just as bum a deal as our enemies, which will be a novelty in small bore shooting.

At the meeting of the Small Bore Committee, three sets of medals were donated, by the Manhattan, the Outers and the Roosevelt Rifle Clubs, each set to consist of a gold, a silver and a bronze medal. It is hoped tthat further similar donations will be secured from the various rifle clubs. Fecker has already donated one of his fine scopes for which he was voted a sincere thanks, and an advertisement in the program. This prize is to be given to a man who wins a match, shooting iron sights.

The only change made from the program previously published, was the addition of a Swiss match at 300 yards, using the 19.8 inch bull. This match ought not to consume a great deal of time, it was figured. Cap Richard, Bill Tewes, and Jack Dooley are formally invited to attend the shoot, and will not be prohibited from trying to persuade the small bore nuts from shooting their ammunition. All other ammunition manufacturers are also invited to come and do their work. They will not have thrust on them the dubious job as range officers, and can devote all their time to idle gossip and trying to dissuade the shooters from using their ammunition. Just imagine the representative of the Amazon Cartridge Company saying, "Now feller, you don't wanna shoot this stuff we make. It won't get you any place and the fool stuff shoots wild on machine rest, and we just do not care to sell it anyway." Oh yes. We can imagine it all right.

Oh Yes! There is another change from the program previously published and it is with regret that we announce it. We previously stated that the executive officer of this shoot would be our old friend, Harry Pope, but it turns out that Harry will be unable to officiate as he has previous engagements which cannot be broken. Unfortunately we made this announcement without consulting Harry and we now learn that he cannot be with us.

The real object of this shoot is to restore the shooting game in New York State, in which it has lagged for many years, beginning with the closing of the old Creedmoor Range. By holding forth suitable prizes for iron sight men, we hope to enlist many new shooters, and in that way improve the game. We believe the future of the small bore is great and this shoot is planned accordingly. We hope to not detract from any other Small Bore Matches in any respect, and feel that we will help them greatly by adding new blood to the shooting game. In fact we feel that after this shoot has been held once, the result will be many new faces at Sea Girt, as these men will become interested in the game, and will draw shooters from entirely new localities.

The Eastern Massachusetts Rifle League

By D. C. McNeil

IN the past the rifle clubs in this section of the State had been meeting for occasional outdoor matches, but there had been no definite program aranged. At the 1924 Annual Turkey Shoot of the United Shoe Machinery Athletic Assn. Gun Club of Beverly (this organization was formed about fifteen years ago as a trap shooting club, but the interest in that line of sport died out and the traps were taken out and up-to-date rifle and revolver ranges have been built, so the club is a rifle and revolver club although it still retains its original name) the idea of forming a league was talked of, so about the first of January the officers of the United Shoe Club wrote to all of the rifle clubs in this section of the State that they could get in touch with. About twenty clubs were written to, but several of these clubs are inactive at the present time. A meeting of representatives of the various rifle clubs was held in the Conference Room of the Boston Y. W. C. A., 316 Huntington Ave., at 2 P. M. on Feb. 21st. The first business of the meeting was to vote to form a league of civilian rifle clubs, followed by the selection of a name for the organization. Eastern Massachusetts Rifle League was thought to be the most appropriate. It was voted to hold matches twice a month and have three teams shoot together, but in making up the schedule it was found necessary to change this to two teams. Each club was to be represented by a team of six men armed with .30 caliber guns, as shooter. The matches were all shot at 200 yards as that was the longest distance available at most of the ranges. Various courses of fire were talked over and it was decided to start the first season with a slow fire course of 2 sighting and 5 record shots prone and 5 record shots standing, but this will probably be changed to a longer course with possibly some rapid fire for next season. The "A" target with 10 inch bull's-eye was used in all the matches. Any rifle weighing not over 10 pounds and having 3 pounds trigger pull and iron sights was allowed.

It was talked of limiting the rifles to .30 calibre, but some of the clubs thought that they would have difficulty in getting a team of six men armed with .30 caliber guns, as most of the men prefer to shoot their own rifles.

This would have to be considered before adopting a rapid fire course, as that would eliminate the single shot rifles. Although any rifle was allowed practically the only one used was the Springfield .30-'06. In sending in the scores the secretaries did not state the rifles that were used, but as far as I know there were two Krags, one .32-20 Marlin, one Mauser with Springfield barrel, one 414 Stevens and one 1897 Marlin, which was shot by Mrs. D. C. McNeill the only lady shooting in the League. It was arranged to have any disputes settled by the team captains, but this was hardly necessary as every match was shot in a friendly way. Gerald R. Harvey of the Middlesex Club was elected President of the League and David C. McNeill of the U. S. M. A. A., Secretary and Treasurer. When the time arrived to draw up the schedule it was found that there were only seven clubs to shoot, viz. Arlington Rifle Club, Braintree Guards Assn. Rifle Club, Framingham Rifle Club, Lynn Rifle & Revolver Club, Reading Rifle & Revolver Club and the United Shoe Machinery Gun Club of Beverly. Some difficulty was encountered in trying to work out a schedule for seven teams, but it was finally arranged to use three ranges on each shooting day and have six teams shoot and one remain idle, by shooting on seven days each team met the other six teams once and remained idle on one shooting date. It was hoped that it could be arranged to have a match and return match with each team, but it was impos-

sible to arrange this and have the series end before the matches at Wakefield and Camp Perry. The dates of the matches were April 25th, May 9th, May 23rd, June 6th, June 20th, July 11th, July 25th, and the ties were shot off on Aug. 1st. All of the matches were shot on Saturday afternoons, as there were no club ranges that could be used on Sunday. The prizes were medals, with the exception of a flag for the club winning the most matches.

There was a solid gold medal for the man with the highest average who had shot in 75% of the matches and the same for the man with the highest score, the next three high scores were to receive silver medals and the next six bronze.

Each club contributed $10.00 towards the expenses of the League.

In the first match on April 25th, the Middlesex Club made a score of 269 which was 10 points more than made by any other club on that date, this lead was steadily increased as the season advanced. The total scores for the seven matches were Middlesex 1662, U. S. M. A. A. 1599, Braintree 1551, Arlington 1527, Framingham 1518, Lynn 1506 and Reading 1471. The Middlesex Club won the flag as they were not defeated during the series. Their closest match was with the U. S. M. A. A. when they won by three points. The gold medal for highest average went to G. R. Harvey of the Middlesex Club who had an average of 47.16. He was tied with I. Langille of the same club, but won in the shoot-off. The gold medal for highest score was won by I. Langille with a score of 49, the silver medals for second, third and fourth places went to A. D. Colby and Lt. Thanisch of the Middlesex Club with scores of 49 and W. Easter of the Framingham Club who had a 48. The winners of the six bronze medals were R. H. McNeill of the U. S. M. A. A., C. Josephs of the Arlington Club and Col. Stewart of Middlesex with scores of 48 and H. L. Perkins, W. H. Grinnell and H. Gulbransen of the U. S. M. A. A. with 47s. D. Hayden and T. Gould of Braintree, H. A. Townsend of Reading and R. B. Miner of Lynn also had scores of 47. At the close of the matches there were two men tied for high average and these same two with two others were tied for high score. There were also four scores of 48 and seven of 47, so it was decided to shoot them off over the same course, rather than rank the scores.

The shoot-off was held on Aug. 1st, at the range of the Middlesex Club at Lincoln, as it was the most central range. The tie for high average was shot off and then the one for high score and so on down the line. The only place that it was necessary to shoot off twice for was the tenth. The forming of the League has done much to stimulate the interest in outdoor rifle shooting in this part of the State.

The regular attendance at some of the clubs has more than doubled and one club that has only done indoor shooting until this season, has put a team in the League and had a large crowd out to all of their practice shoots.

A Little Encouragement for Prospective Hand Loaders

By E. Naramore

AT fairly frequent intervals there appear in the columns of the "Dope Bag," inquiries from shooters who are just "busting in" to the hand loading field, and want advice on measuring powder charges for pistol cartridges.

The advice given is always to get a Bond or Ideal powder measure for dense powders such as Bullseye and du Pont's No. 5, and to check the setting of the measure on scales sensitive to 1-10 grain, and that bulk powders may be measured in a scoop of proper capacity. Nothing could be truer, but it must be an awfully discouraging reply to the fellow who has saved carefully to acquire the hand tool with which to assemble components into complete rounds of ammunition, to find that he must invest about as much again before he can produce ammunition safely. His burden is further added to if he lives in a community where there are no corner druggists to help him out in checking the charges thrown by his powder measure. How much cheaper and convenient it would be if he could only scoop his dense powder in the same manner as bulk powder.

He can—and can make pretty good ammunition in the bargain. Safety is of the first importance and the scoop should be made so that it cannot hold more than the maximum recommended charge of a given powder. This is done by jarring a maximum charge down into the shell or bullet jacket from which the scoop is to be made and filing it down flush with the powder. This involves the use of a sensitive scale and if one is not available, the scoop will have to be bought. It is surprising the amount of variation that can be obtained with a scoop if one tries for extremes. For instance, a scoop that held 5.1 grains of Bullseye when filled a little at a time and jarred repeatedly by tapping the bottom of the scoop on the loading bench gave 4.3 grains when handled normally and a minimum of 4.1 grains by scooping very carefully. The extreme variation was one whole grain and enough to cause separation of the continuity of the cylinders of some guns. However this scoop is perfectly safe to use for any cartridge that will digest five grains of Bullseye.

Using the .45 automatic cartridge and three different dense powders, I made scoops of proper size and threw a number of charges of each powder, checking each on a scale. In doing this I purposely did all the things that should not be done such as putting a little powder in the lid of a cartridge box so that I had to scoop two or three times to fill the measure, scraping the handle of the measure along the side of the box as I scooped the charge up and bumping the measure against the side of the box, making it necessary to add more powder to fill it. Some charges were scooped properly and others with extreme care to get minimum loads. This gave all the variation that the most careless or ignorant person could get. I then fired the ammunition so loaded at twenty yards for group taking care that each lot contained some maximum and minimum loads. In brief, this stuff was about as rotten as it was possible to make it in so far as powder charges were concerned, but was perfectly safe. I assumed that the horizontal dispersion represented the error of holding and the mean error in the ammunition. This assumption is not quite correct, as the arm has more of a tendency to sway sideways than to bob up and down.

Powders used were Bullseye, du Pont No. 5 and du Pont Lot No. 1007-7-45, which was obtained through the D. C. M. I expected Bullseye when I ordered pistol powder, but it only took one look to tell that this stuff wasn't even a relation to it. The du Pont Company informed me that it was very similar to their No. 3 and could be loaded as such. It is good powder, but not quite as clean as Bullseye. For convenience, I will refer to it as No. 3.

Bullseye gave me a group 7-8 inch wider than it was high. No. 5 gave a group 1-2 inch wider than it was high. On these two lots the error in holding was greater than the vertical error of the ammunition. No. 3 gave a group that was beautiful to behold. Not because the bullets all went through the same hole, but because it showed just what I was after. The shots were strung vertically—almost in a straight line except for a few. The whole group measured 1 1-2 inches wide by 5 5-32 inches high. Every shot fired with all powders would have hit a quart tomato can at twenty yards and most of them would have hit a half pound baking powder can. This was with hardly two powder charges alike and an extreme variation of nearly a whole grain weight.

Using a sufficient quantity of powder so that charges could be scooped without touching the box, it was no trick at all to throw them within an extreme variation of 0.3 grain, and the majority of the charges ran very uniform. Ammunition so loaded could be expected to give uniform results. For instance, 25 charges of No. 3 gave a mean of 4.5 grains, extreme variation of 0.3 grains and fifteen of them weighed exactly 4.5 grains. The chances are that the fellow just starting to load pistol ammunition cannot hold any too well and scooped charges will answer all purposes as well as the most carefully weighed charges. By the time holding becomes so good that the slight inaccuracies of the ammunition can be detected, it is probable that funds will have been saved to acquire a real powder measure and a scale to check it with. In the meantime, a whole lot of pleasure will have been had and a good deal learned regarding hand loading ammunition. The very important thing in making a scoop measure is to be sure that it cannot hold an over-charge.

THE DOPE BAG

A FREE SERVICE TO TARGET, BIG GAME AND FIELD SHOTS
ALL QUESTIONS BEING ANSWERED DIRECTLY BY MAIL
Rifles and Big Game Hunting: Major Townsend Whelen Pistols and Revolvers: Major J. S. Hatcher
Shotgun and Field Shooting: Captain Charles Askins
Every care is used in collecting data for questions submitted, but no responsibility is assumed for any accidents which may occur.

Advice to a Tyro Rifleman and Hunter

By Townsend Whelen

THE following correspondence is published to indicate the infinite pains which are taken to set correspondents right, and to give them the exact and detailed information for which they write. This is just part of the real service which is given willingly to all subscibers and readers of THE AMERICAN RIFLEMAN and all members of the NATIONAL RIFLE ASSOCIATION.

I AM going north of Port Arthur to try for moose, and would like your opinion on the best gun. I own a .405 Winchester, short, seems to be a carbine or saddle gun, a .30-30 Savage, and have a Sauer Mauser 8 mm. offered me at $45 (second hand) in perfect condition. It's the handsomest gun I ever saw.

Would you advise using the .405 and trust that the chance comes at 100 to 150 yards?

Would you advise a longer barrel on the .405? If so, what length?

Send it to Winchester or Niedner of Dowagiac? What cartridge? (Is there only one?)

The Sauer Mauser—Is this gun as good as it looks? (Says Krupp Fluid Steel, solid matted rib, case hardened bolt, beautiful sporting stock, fine checked pistol grip—looks like a gun that should sell for $125-$175).

What is the approximate cost of a new one? Is it a genuine Mauser? Is the 8 mm. Remington cartridge the only one made? Would it be feasible to rebore this gun to take a standard American cartridge (Hi-velocity). If so, what one?

Would you advise the 8 mm. Sauer for moose and deer in preference to the .405 or .30-30? Why?

Would you suggest a .30-'06 Winchester? (I can get a new one, stock model, at $40.) What cartridge?

Would you suggest a star gauged new Springfield on a sporting stock at about $85 to $95? If so, why?

Have you discussed the new .30-'06 in a magazine? If so, when and where?

Titles of your books on rifles and revolvers. Publisher's names.

Kindly pardon this long list of questions—answer in pencil notations on margin or back of letter, if you wish.

I'm crazy—about guns—and I know it! **L. H. P., Indianapolis, Ind.**

Answer (by Major Whelen). I have your letter of August 25th. I will endeavor to set you straight on this matter of rifles to the best of my ability and the limits of a single letter.

The .405 Winchester is an excellent moose rifle. It has all the power, knock down qualities, rapidity of fire, and accuracy necessary. You do not mention the length of the short barrel of this rifle. If it is not less than twenty inches the chances are that this short barrel makes the rifle handier in brush without detracting from its other good qualities. The .405 is ample in accuracy and trajectory for moose up to 200 yards, but the rather curved trajectory beyond that range makes it not quite so good a long range rifle as some other more modern weapons with flatter trajectory and longer bullets. The shortcomings of the .405 Winchester are that it is a rather uncomfortable awkward rifle to carry on a long tramp, and the rather heavy recoil makes it difficult for some men to carry it without flinching. The proof of its excellence for you is how well you can shoot it. Practice with it for a week or ten days. If, at the end of that time you can put ninety per cent of your shots, fired in the standing position, in a 12-inch bull's-eye at 100 yards, it is the gun to take along on your moose hunt. If you cannot, either the rifle is not satisfactory for you, or you have not reached that degree in marksmanship where you are ready either to select a rifle or to go on a big game hunt.

The .30-30 Savage is a most excellent deer rifle. It is not a sportsmanlike rifle to carry for moose as it lacks the requisite power, and even in the hands of an excellent game shot, it permits too large a proportion of wounded animals to escape to die a lingering death.

Of all the calibers that I know of the 8 mm. Mauser is the very worst. There does not seem to be any standardization in the boring or chambering of this rifle, or in the making of ammunition for it. Every rifle maker seems to have his own standards of bore and chamber, which apparently have no reference whatever to any existing make of cartridge. So too with the cartridge makers. They don't know what rifle to make their cartridges to fit, so most of them make a compromise which does not do well in any rifle. The 8 mm. Mauser used with factory ammunition, is the most inaccurate and unsatisfactory rifle that I know of. The Mauser breech actions are usually fine, and the best thing I know of to do with one of these rifles, if one has been so unfortunate as to have purchased one, is to send it to the Hoffman Arms Company, Ardmore, Oklahoma, or the Niedner Rifle Corporation, Dowagiac, Michigan, to have a new barrel for the .30-'06 U. S. Cartridge fitted to it, and the breech action adjusted to handle this cartridge.

Decidedly the best rifles for all American big game are the Sporting Springfield, the Remington Model 30, and the Winchester Model 54, all for the .30-'06 cartridge. The choice between these three rifles must be a purely personal one. They should all be equipped with gold or ivory bead front sight, Lyman No. 48 rear sight, and a Whelen gunsling, and should be accurately targeted by the man who is going to use them.

The stocks on these rifles are of varying excellence. A tyro rifleman is hardly in a position to judge what he wants or needs in the way of a properly fitting stock. As he gains experience in marksmanship his opinions and needs in regard to a stock mold themselves, and in the case of a man with normal or nearly normal build, the more experience he has the more nearly his ideas as to a properly fitting stock approach to the Springfield Model 1922 pistol grip stock which is furnished with the sporting type of .30 caliber Springfield rifle, which can be purchased by members of the National Rifle Association through the Director of Civilian Marksmanship. The Remington and Winchester stocks differ materially from this Springfield stock, therefore a man who purchases a Remington or Winchester rifle of the above models will probably find that sooner or later he will wish to have his rifle restocked to more properly fit him and conform to his ideas.

A great variety of ammunition is furnished in .30-'06 caliber. The particular cartridges which I believe to be best for our larger and heavier big game such as bear, moose, caribou, and elk are the Western Cartridge Company load with 180 grain open point, boat tail Lubaloy bullet, M. V. 2720 f.s., and the Remington Arms Company load with 220 grain "Delayed Mushroom" bullet, M. V. 2450 f.s. For deer, sheep, and goat either of the above cartridges or any of other makes of cartridges with 150 or 180 grain expanding bullet are excellent and all that is needed. For small game a special hand load consisting of 150 grain full jacketed, service bullet, and 18 grains of Du Pont Sporting Rifle Powder No. 80 is excellent.

An excellent start at a practical library for a tyro sportsman and rifleman would be:

"The American Rifle," by Major Townsend Whelen, price $6.00. "Care and Cleaning of Modern Firearms," Price 25 cents. Both the above can be obtained from "The American Rifleman."

"U. S. Army Training Regulations No. 150-5, Marksmanship, Rifle, Individual," and "U.S. Army Training Regulations No. 150-10, Marksmanship, Rifle, General," obtainable from the Superintendent of Documents, Government Printing Office, Washington, D. C. Price 10 cents each, stamps not accepted.

"Price List of Rifles and Ammunition for Sale to Members of the N. R. A.," obtainable from the Director of Civilian Marksmanship, War Department, Washington, D. C., on request.

A little booklet of mine entitled "Big Game Hunting" published by Outdoor-Recreation, 500 North Dearborn Street, Chicago, Illinois, price 50 cents will also probably be of considerable assistance to you, both in preparation for your hunt, and on the hunt itself.

Every sportsman-rifleman should have a copy of Kephart's "Camping and Woodcraft," two volumes, which you can obtain on special order through any large book store.

THE 1917 ENFIELD

WHY don't we hear more of the Enfield Rifle U. S. Model 1917? It has been said to be equal to the Springfield, but I have never seen one and for the benefit of myself and others I would like a little discussion comparing the relative merits of the two above mentioned arms. The longer barrel of the Enfield should be an advantage. Is the bolt as strong and safe as that of the Springfield? Can the excessively high sight line be lowered very much? Everything else being equal I would prefer the Enfield on account of the longer barrel. I am inquiring

with a view to getting the best rifle for the .30-'06 cartridge, suitable for big game hunting. I expect to do the remodeling myself, as I only want a plain serviccable weapon.

Is there any advantage in using boat tail bullets in the Krag rifle? It looks as though it might materially increase the velocity for a given breech pressure (42,000 lbs. for this rifle) as it has done in the case of the .30-'06 Springfield.

Are the regular .30 caliber bullets correct diameter for good results in the 7.62 Russian Rifle? Is the action of this Russian Rifle as strong as the Mauser or Springfield actions? What I refer to is the size and location of bolt lugs. This little detail of bolt and lugs interests me because of the fact that my older brother lost a good right eye some years ago when a Mauser bolt let go. M. L., Jordan, Montana.

Answer (by Major Whelen). The U. S. Rifle Model 1917 is an excellent military weapon, but in a number of respects it is not quite the equal of the Model 1903 rifle (Springfield). Its longer barrel gives approximately 75 f.s. more muzzle velocity than the Springfield which is a slight advantage. You will appreciate that this rifle was made by quantity production in enormous numbers during the war, and that in such production tolerance had to be made larger to insure interchangeability in the product of three factories than is the case of the Springfield made at one factory only in time of peace. Also the Model 1917 has a barrel which is bored and rifled on specifications for the .303 British cartridge, although chambered for our .30 cal. Model 1906 cartridge. This groove diameter varies between .312-inch and .315-inch, whereas the groove diameter of the Springfield varies between .308-inch and .309-inch, with 90 per cent of them varying only between .3080-inch and .3083-inch. A groove diameter of between .3080-inch and .3085-inch has been found necessary to give the very best accuracy with the .30 caliber Model 1906 cartridge. The model 1917 barrels give good accuracy, but not nearly equal to Springfield barrels.

The Model 1917 rear sight has no windage adjustment, and can be adjusted for elevation only to even hundreds of yards. As a result the sight cannot be set exactly so that with normal aim the bullets will strike at the point of aim. As a result one must make two estimates, one as to how far to hold off in aiming to strike a certain point, and the other as to whether he is holding off that much in aiming. As a result there is still a further decrease in accuracy.

The line of sight on the Model 1917 rifle is very high, and the comb of the stock low. As a result the side of the face cannot be pressed hard against the comb of the stock to hold the eye steady in the line of aim, and the aim is not quite so steady with the 1917 as with the 1903 rifle.

All these defects could be easily corrected in future manufacture, and then the Model 1917 would be as good a rifle as the Model 1903. It is probable that the Model 1917 breech action is a little stronger than the Model 1903 but then the latter action has such a large margin of safety that even it may be said to be excessively safe.

The Russian rifle has a groove diameter of .312-inch to .315-inch. The various .30 caliber bullets measure about .3083 to .3085-inch. Such bullets are about as satisfactory in the Russian rifle as the .30 cal. Model 1906 cartridge is satisfactory in the Model 1917 rifle. I would regard the Russian breech action as having an ample margin of safety, but as being not nearly as strong as the Model 1903 or Model 1917 actions.

THESE $4 KRAGS

I RECENTLY purchased one of those four dollar Krag carbine through the N.R.A., and after having used it a little, there have been several questions which have come up in my mind.

Three or four shells out of every ten would split at the neck—sometimes way down onto the body of the case. Is that at all dangerous? What is the cause? The shells seem to have a different shape at the shoulder than the chamber, i.e. they have to swell a lot to fit. Do you think the trouble is with the gun or the ammunition? The ammunition is government ammunition, loaded by Remington in 1917 and 1918.

The bore in this carbine is quite worn and rusty. Do you think it would be advisable to have it bored out larger and use larger bullets. I mean, for instance, bore it out to take .32 Special bullets. This of course would necessitate reloading, using .32 Special bullets in the Krag case. Could the neck of the Krag case be expanded easily to a size large enough to take .32 Special bullets?

Is it possible to use British .303 cartridge in the Krag? Why are not the British .303 cartridges sold through the N.R.A. reloadable?

In regard to Krag ammunition manufactured by Remington in 1917 and 1918, is there any preference? Are both the '17 and the '18 shells suitable for reloading?

I read somewhere that the present day 220-grain .30 caliber bullets do not have such a long bearing surface in the barrel, as the old 220-grain bullets. This is because the rifling in most guns extends back far enough to handle pointed ammunition satisfactorily. Are the bullets in the '17 and '18 Krag ammunition the kind with long bearing surface, like the original Krag bullet, or are they of the modern type, intended for rifles like the .30 '06?

A friend recently bought a Krag rifle through the N.R.A., and it seems absolutely new. Do you know if any of the Ross or Krag rifles available through the N. R. A. are new? J. B. D.

Answer (by Major Whelen). I have your letter of the 21st instant. The splitting of the necks of the cases in your Krag rifle is due to what is called "Season Cracking," that is a change in the grain structure of the brass due to age, poor brass, and tension at the neck. It is in no way the fault of the rifle. Such cartridges are unsatisfactory, but not dangerous. Almost all war time ammunition has this defect to a more or less extent.

It is probable that the groove diameter of your Krag carbine runs about .309-inch. If it is worn and rusted, the bore has probably been injured down to about .315-inch. To rebore for the .32 Special cartridge you need a perfect bore diameter of 313-inch. Also it is impractical these days to rebore a barrel as it costs more to do so than to make an entirely new barrel. You would have to have special reloading tools, muzzle resizing dies, and before you got through with it the thing would cost you much more than a new high class barrel.

On the other hand a good gunsmith, or a good machinist might be able to lead out your barrel, following the instructions given in my book "Amateur Gunsmithing," and you could then use bullets for the .303 British cartridge in your rifle. These bullets measure about .311-inch, and I think that you might be able to get very good results with them, also with the .303 Savage bullets which are the same size.

I doubt if you will be able to get very good results with Krag ammunition made during the war. You will understand that even with the .30-'06 ammunition made at that time, there was a deterioration in materials and workmanship due to the enormous increase in production. And undoubtedly the poorer grades of materials and workmanship went into the Krag ammunition which was not of so much importance as it was not used in France. These war time Krag bullets were of the old correct style for the Krag rifle with long bearing. I really think that such bullets are no longer made, as it pays the factories to make up all 220 grain bullets so that they can be used in both Krag and Springfield, which means that they are made with a short bearing so as to fit in the throat of the Springfield rifle. Probably the .303 British 215-grain soft point bullet as made by Winchester will fit the Krag throat better than any present 220-grain .30 caliber bullets.

Many of the Krag rifles are new or almost new. Also most of the Ross rifles are practically new, having been used to drill with, but never fired.

SET TRIGGERS

CAN you furnish me any information on the design of set-triggers for both the regular hammer type as well as the bolt action rifles or advise me where I may be able to obtain it? Being a skilled mechanic by occupation, I believe I could build these for myself if I were able to obtain a better general idea and details of their construction than given in either of your books.

I have a .250-3000 Bolt Action Savage rifle of the light weight type. I do not seem to get the accuracy I should from it in the offhand or standing position as compared to the results I obtain from the Winchester rifles having 26 inch barrels. I have thought it due to the lightness of the gun, its short light barrel and to its having its center of gravity (I believe that is the proper term) located so much farther back toward the butt. I understand the Savage Arms Co. are furnishing this gun with twenty-four inch barrel of a greater weight. Have you seen and shot this heavier type gun and can you advise me if there is a sufficient difference to give a very great advantage in accuracy in the standing position and in the handling of reduced loads?

My use for a rifle is confined wholly to the hunting of woodchucks and similar vermin in a hilly, sparsely settled farming section and to target shooting. I usually load my own ammunition both from a point of economy and for the "kick" I get out of it. Having this in mind, which do you think would give me the most satisfactory and best results, the heavy barrel Savage or the Sporting Model Springfield? I now have a Winchester Telescope on my Savage and would ask that the Springfield furnished me be equipped with bases for the same. E. W. L., Oxford, N. Y.

Answer (by Major Whelen). It is difficult to describe the mechanism of a set trigger without a good illustration of one and I have no such illustration available. They all work on the same principle. You pull one trigger which sets the other trigger. The pulling of the first trigger pulls down on a small hammer. The touching of the second trigger releases this hammer, which propelled by a spring knocks the sear off the cocking piece or out of its notch in the hammer. There are a great many German rifles about the country now with set triggers. If you can get ahold of one of these, by dismounting it you will easily recognize the principle upon which it is made.

The .250-3000 Savage Bolt Action Rifle is a most excellent little weapon, one of the best of all our machine made rifles. It is of the Featherweight type and balanced like a shotgun, the demand being entirely for that type. Such light rifles are always more difficult to shoot offhand than those with heavier barrels balanced farther forward. The heavier rifle moves slower and is less disturbed by any flinch. There is probably almost always some flinch in every trigger squeeeze and this shows up when shooting a very light rifle like the Savage. On special order and at a slight increase in price the Savage Arms Company can furnish the .250 rifle with a heavier barrel of the same outside dimensions as the old .303 barrel, which was placed on their lever action rifles many years ago. With such a rifle the accuracy will be increased very slightly and the ability to shoot it accurately in slow fire offhand will be very materially increased but the rifle of course will not be as light and handy for hunting and snap shooting. The increase in weight is probably about a pound and a half.

The .250 Savage is a very satisfactory rifle in every respect and very excellent results can be obtained from it with reloaded ammunition. In all these respects however the sporting model Springfield is the best rifle in the world. The choice between them depends upon what use you are going to put your rifle to. If you do not believe you will ever have a chance to use it on Western big game, for moose, or for the finest competitive target shooting, then the .250 rifle is probably the most useful all-around weapon but one never makes a mistake in a sporting Springfield.

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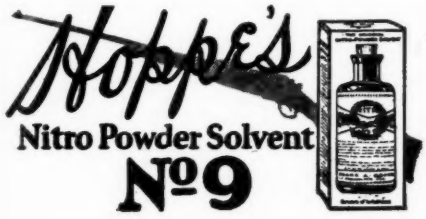

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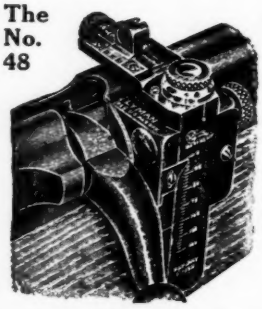

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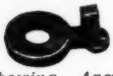

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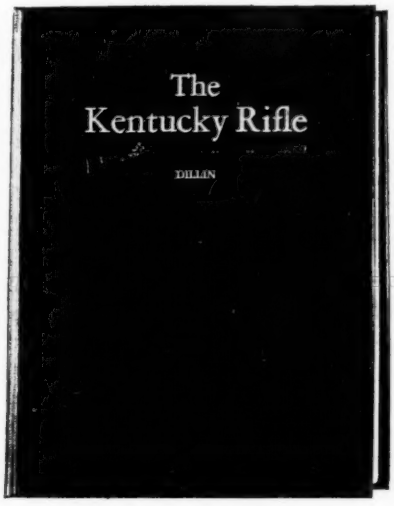

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This is the choicest treasure among all the books I have accumulated in a lifetime given largely to the study of American frontier history and to the literature of the out-of-doors. And I prize especially your own portrait and the dedication, so aptly worded, to the old firearm itself.

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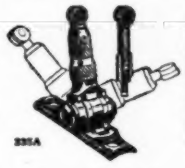

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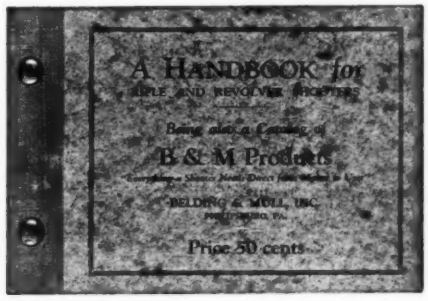

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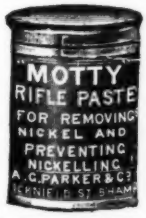

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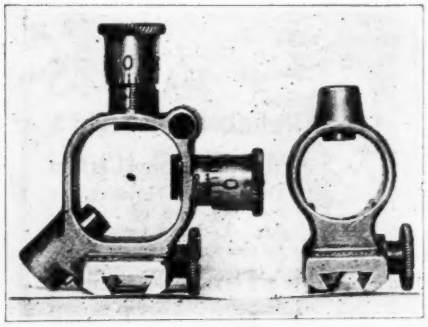

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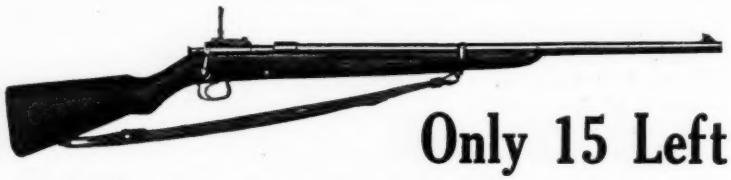

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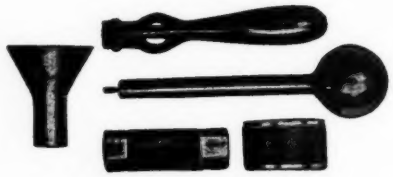

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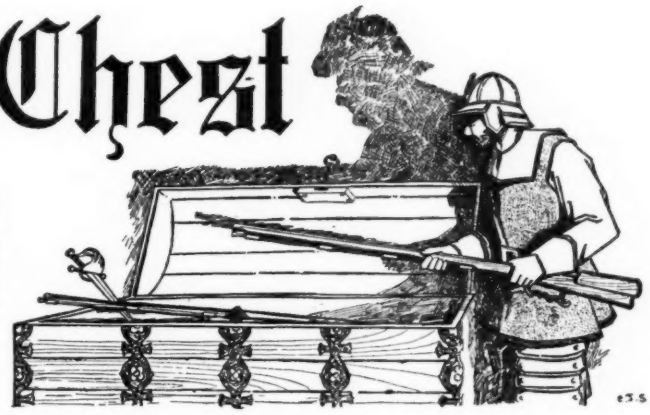
813 West 5th Street, Wilmington, Del.

The Arms Chest



TERMS

THE uniformly excellent returns from advertisements appearing in the classified columns of THE AMERICAN RIFLEMAN make it a most satisfactory and productive medium for the disposal of surplus shooting equipment, or the acquisition of special types of firearms.

Free Insertions. Each subscriber is entitled to one insertion of one-half inch, when his subscription is paid for one year. It is necessary only to write or print the text plainly, noting thereon the date subscription was paid. These advertisements will appear in the first available issue and should be in publication office two weeks prior to the following publication date.

Paid Insertions. Non-subscribers or those who have already made use of the subscriber's privilege may take advantage of these columns at a cost of $1.00 per inch or part thereof. No advertisement for less than $1.00 accepted. Advertisements will be set in 6 point solid. They should be in the publication office two weeks prior to the time appearance is desired.

TRADE—Winchester 20 ga. 1912 full, 1 year old, forearm and pistol grip, checked, jot-sam, pad, oil furnished. FOR Double barreled 20 of equal value. Frank White, 634 Spitzer Bldg., Toledo, Ohio. 358

FOR SALE—One star-gauged Springfield made previous to late war. Barrel in perfect condition. Fired about 100 rounds. Firing bolt slotted for sight. Otherwise as issued. Price $30.00. Wm. Winston, Rome Ga. 359

FOR SALE—New guns at discount to members N. R. A. Also number of used guns priced right. No list, say what you want. Member N. R. A. Earl J. Russell, Monmouth, Ill. z

SHIFT WITH THE HOUSE OF SHIFF the GUNMAN, North Woodstock, New Hampshire. I need 500 fine used Colt's for cash or kind or Smith & Wesson except .45 Auto or 17s. I pay 90 per cent of what they bring. My list shows that. A

SHIFT WITH THE HOUSE OF SHIFF THE GUNMAN, N. Woodstock, New Hampshire. The last price list for 1925 will be out in a few weeks. Our stock is very complete and summer prices hold until October first. We are stealing second base from the fanatics. If you can read and FIGHT you will get your money's worth if you care to ship your stamp. B

FOR SALE—No. 39 Marlin .22 cal., brand new condition, fired less than 200 times, with Lyman No. 1-A peep sight, waterproof canvas case and Marble's jointed rod, cost $35.50. Take $25.50 delivered. Stevens "Offhand" pistol 8 inch barrel, better than new oiled stocks, flat bar and notch rear sight and hand smoothed triger-pull, perfect condition, cost $14.50, take $9.00. Springfield carbine .45-70, good condition, acurate gun $3.50 delivered. H. N. Spencer, 1601 Railway Exch. Bldg., St. Louis, Mo.349

SHIFT WITH THE HOUSE OF SHIFF, THE GUNMAN, N. Woodstock, N. H. This is our 54th year, and best. I have never shipped a gun I did not personally back EXCEPT New. DIRECT to your order. I never carry because they are cheap but only because they are RIGHT. One charge. One price to ALL. If you have not shipped your stamp, if you are not fighting fanatics, if we have to smuggle our guns as you do a drink THEN SHIFF'S NEW YEAR'S MESSAGE to YOU is that it serves YOU WELL AND RIGHT. Y

WANTED—Percussion Colts: 9 inch barrel, six shot, caliber .44 cylinder 2½ long, square back trigger guard length about 16 inches. Loading lever, round cylinder slots. No trigger guard, folding trigger, round cylinder slots, marked, "Patent Arms Mfg. Co., Patterson, N.J. Colts Pat." Square back trigger guard, no loading lever, round cylinder slots, cal. 31. Write for photos. Examine your percussion revolvers also ask your friends to let you see theirs, if any answer the above descriptions write me, I pay highest prices. I am a collector, not a dealer. FLINT LOCK PISTOLS: Lock plate marked "Harper's Ferry 1806 or 1807 Eagle and U. S." Market "U. S. Springfield 1818." Lock plate marked "U States under Eagle also S. North Berlin, Conn." S. H. Croft, 33rd & Market Sts., Philadelphia, Pa. x

FOR SALE—.375 Hoffman, hand made $300 grade full Lyman sights with 24-inch barrel both rifle and stock absolutely perfect inside and out, complete with Hueter Bros. reloading tools, 500 bullets, 150 new cases, 150 rounds loaded ammunition. First check for $200.00 takes the outfit. K. A. Martin, Box 1617, Pittsburgh, Pa. c

EDITOR'S NOTE

We print the following letter from Mr. Hans Roedder as this is the third complaint we have had regarding this particular advertisement and THE AMERICAN RIFLEMAN would like very much to locate Mr. Schultz and turn the matter over to the postal authorities for proper action. For two months there have been a number of advertisements inserted from different places in New York City which we are lead to believe are the work of one individual who has been excluded from our columns for over a year. We are very anxious to locate this party and THE AMERICAN RIFLEMAN will add $5.00 in addition to the reward offered by Mr. Roedder.

48 Market Street,
Bangor, Pa.
September 11, 1925.

American Rifleman,
Washington, D. C.
Gentlemen:

Kindly insert the following ad in the Arms Chest column as early as possible.

It may be of interest to you to know that the man whom I am trying to locate advertised in these columns, accepted my money, but did not send me the goods. This is the first instance of unfair dealing I ever had with advertisers in your magazine, and I have bought and sold through its medium for many years.

Yours truly,
Hans Roedder, D. C.

REWARD! Will pay $5.00 for information leading to present location of one Henry Schultz, New York City, who advertised in these columns in the August 1st number.

H. Roedder, Bangor, Pa.

FOR SALE—Brand new in factory grease. Two .32-40 Model 1894 Winchester take-down 26-inch Octagon, $21.00. Three .32-20 Model 1892 Winchester take-down, 24-inch, Octagon $20.00. Three .32-20 Model 1892 Winchester solid frame, 24-inch Octagon, $18.00. One .38-40 Solid frame, $18.00. Four .250-3000 Savage Bolt Action, $38.00. Above guns are right off dealer's shelf and perfect in every way. Certified check or money order. 5 M .380 M. C. $21.00 per M—$2.25 per hundred. 2 M .32 Win. Spl. M. C. $32.00 per M—$3.25 per hundred. 2 M .303 Savage M. C. $32.00 per M—$3.25 per hundred. .38 Long and .38 Short Colt O. S. Lub. $13.00 per M—$1.40 per hundred. Edward A. McGoldrick, c-o. McGoldrick Lumber Co., Spokane, Washington. 387

WANTED—3 extra magazines for Auto. Colt Government Model. W. W Abraham, Jr., Locke, Washington. 361

WANTED—One .32-20 Bisley Colt 7½-inch barrel, in perfect condition. Price must be right. Chas. W. Meyers, Brunswick, Mo. 390

FOR SALE—.38 S. & W. Special 6-inch barrel, fine condition in and outside, $22.50. O. E. Huff, c-o. Oberndorf Mfg. Co., Pittsburgh, Pa.366

FOR SALE—No. 4 Ithaca Trap Gun, 34 inch barrel, auto. injector, in perfect condition inside and out. 14-inch stock, 1½ inch comb and 1⅝-inches at heel. Rubber recoil pad. Price $65.00. V. E. Chesky, Halstead, Kansas. 375

FOR SALE—New S. & W. Military and Police cal. .32-20, 6-inch barrel, square butt, fixed partridge sight, tried at target 12 shots, absolutely new, for quick sale, $20.00. K. T. Gan, 5815 Maryland Ave., Chicago, Ill. 371

FOR SALE—Colt Pol. Pos. .38 Special, brand new, $18.00. Colt .45 Auto. Govt. Model, excellent, belt, holster, 2 extra clips, $13.00. War Luger (1918) 9 mm., excellent, $15.00. F. H. Wylie, Arlington, Mass. 398

SELL—Fox "A" grade, 12 ga. 28 inches, 7 lbs. $52.00. Springfield .30 Sporter, 1922 pistol grip stock, $40.00. Remington Auto. 12 ga. 28 inch barrel. All three brand new. Ithaca 10 ga., 30 inch bbls., No. 1½ grade, twist, $30.00. Henry F. Zinner, Middleburgh, N. Y. D

FOR SALE—.30 U. S. A. caliber Hoffman $200.00 grade hand made stock and 24 inch barrel by Hoffman Arms Company on Springfield action, with Lyman sights rifle perfect inside and out, first check for $125.00. K. A. Martin, Box 1617, Pittsburgh, Pa. E

FOR SALE—.38 cal. Officers' Model Colt, 6-inch barrel. Gold bead front, pearl and walnut stocks. Factory fitted. Accurate factory condition. $45.00. Or trade for .30-'06 Springfield. S. J. Lanning, 2015 W. Horne St., Sioux City, Iowa. 374

PAY CASH OR TRADE—.30-'06 Bond tools, 150-grain service, 170 grain B. T. some Western T. and C. Works hunting bullets, some .30-'06, .30-40, .300 Savage shells, Springfield stock, small balance scales for 7 mm. tools, molds, shells, bullets, any type. Harold Peterson, East Providence, R. I. 372

FOR SALE—Revolving Back Auto Graflex, 15-inch bellows, rising front, size 3¼-inches x 4¼-inches, lens Goerz Dogmar f. 4.5 (convertible), F. L. 7½ inches; film pack adaptor, 3 plate holders. In new condition except a little of finish on metal fittings worn. Best outfit money can buy for high speed work, color photography, photographing game at long distance or bad light, choice of naturalists and experienced photographers. Most versatile camera made, ideal for enlarging. Cost over $180.00, sell for $135.00, money order; might take as part payment Springfield .30-'06 or Colts N. S. .38-40, 7½-inch barrel, new condition, or make offer. R. H. Calvert, P. O. Box 480, Nashville, Tenn. 389

WANTED—Hensoldt Universal Dialyt 6X 26 mm. Must be in perfect condition. Francis L. Cooper, Spruce Hill, Pa. 392

FOR SALE—One Krag Rifle, new, $20.00. Krag Carbine, fine, $15.00. Krag Rifle Barrel Only, new, $7.00. J. K. Rich, Cato, N. Y. 385

WANT—To buy Winchester 1886 Rifles with nickel steel barrels in good condition. Sidney Maranov, 305 Broadway, New York City, Rm. 705. 379

FOR SALE—Collection of Modern Automatic Pistols and Revolvers, fired less than 100 times at one-half cost. B. B. Wittman, 5434 Arlington St., Philadelphia, Pa. 380

FOR SALE—Collection of Modern Rifles, fired less than 20 times at one half-cost. Sidney Maranov, 305 Broadway, New York City, Rm. 705. 381

WANTED—Ideal Loading tools for 16 gauge including straight line hand loader, re and decapper and Starr crimper. Francis Fell, Box 56, Terrace, Pa. 367

FOR SALE—Marlin Model '93 carbine special finish, oil and waxed finished stock, Lyman windgauge receiver No. 41 with disc, leaf middle, 3-32 Ivory Marble front. Perfect, new, first M. O. $35.00. J. M. De Witt, Troy, Pa.368

FOR SALE—Stevens Pocket Rifle or Pistol, 12-inch Grimes barrel, .22 long rifle, skeleton stock. Makes inch groups at 25 yards. Price $12.00. George Grieshamer, Box 258, Baltic Conn. 386

FOR SALE—Winchester Model 1901. 10 ga. Lever action, $48.00. Model 54, .270 or .30-'06. Factory new. Same. S. & W. .32-20 6-inch blued, sq. butt, fine, $21.50. "ALBERTSON", Lewes, Deleware. 397

FOR SALE OR TRADE—1903 National Match Springfield, star-gauged, Lyman No. 48 receiver sight. Shot about 60 times, $45.00. New sporting stock for .30 cal. Springfield, oil finished, made by Tait, $25.00. WANT .30 cal. Sporting Springfield as issued. W. J. Huston, 2848 Agua Vista St., Oakland, Cal. 376

FOR SALE—Colt .22 Automatic Target Pistol, very fine condition, inside and out, with holster and Marbles' rod, $21.00 plus express. Savage .22 Model 1919 N. R. A. Match Rifle, same condition as pistol, with Kerr web sling, $10.00 plus express. Will ship C. O. D. subject to examination. J. W. Felming, Hartington, Nebraska. 391

FOR SALE—Remington rifle, Model 12-C, in absolutely new condition, $18.00, with Lyman No. 1 rear sight, $20.00. 7½ bbl. for Colt Officer's Model, fine shape, $2.75. Regulation belt and holster for .45 Auto., $2.00. WANT .38-40, S. A. Colt, 5½, blue. Must be in fine condition and reasonable. .45 Auto. ammunition, .38 Spec. empties. Wm. H. Janssen, R. R. 5, Nokomis, Illinois. 388

FOR SALE OR TRADE—Winchester Target Rifle .32-40, weight 12 lbs., perfect condition, with scope, $40.00. Without scope $28.00. Savage .22 H. P. checkered grip and forearm takedown, perfect, $35.00. Savage Sporter, .25-20, checked stock and forearm, aluminum butt plate and grip cap, Lyman sights, $30.00. Savage .250 Bolt, Marble sights, perfect, $40.00. WANT—Winchester .38-40, new condition, and Rem. Auto. Rifle for .22 short. Write for more detailed description. Inclose stamp. C. V. Liggett, Box 65, West Middletown, Pa. 378

FOR SALE—4 spare barrels, 7½-inch, cal. 36 Rem. C & B, bores extra fine, each $1.35. Spare barrel, 7½-inch, cal. 36 Whitney, 55 cents. 5 Ideal shell chambering reamers, .30 cal., new, 85 cents each. 4 detachable walnut pistol grips for .45-70 Springfield, each 55 cents. Collection 200 ancient and modern cartridges, $9.00. Cal. .22 rimfire H & R 6-inch barrel revolver, like new, $7.50. cal. .25 H & R Auto., $8.00. Cal. .22 I. J. 10-inch barrel target revolver, like new, $7.75. Cal. .51 Colt C & B 5-inch barrel revolver, good $8.00. 2 doz. revolver nipples, $1.40. .50 cal. Rem. Navy pistol, 60 cartridges, $14.00. P. A. 5-ball (round) mold, .30 cal., perfect, $3.00. P. A. 4-ball (round) mold, .45-70 cal., perfect, $4.00. Winchester mold, .32 short, $1.00. Ideal mold, .38-55-255 flat nose, $1.60. .4570 resizing dies, $1.00. .45 Colt resizing dies, 85 cents. .30 Krag or Springfield neck resizing dies, 65 cents. .50-70 resizing dies, $1.25. S. & W. single action 7-inch barrel target revolver for .44 S. & W. cartridge, $16.00. Spare cartridges (obsolete) for collectors. Transportation extra. B. K. Wingate, R-2, Reading, Pa. 377

FOR SALE—Ross .280 Sporter. Practically new. Slots for 'scope. R. C. Rodman, Cherokee, Iowa. 394

FOR SALE—Marlin Mod. 39 cal. .22. In excellent condition, $24.00. WANT reloading tool for .38 Spl. and cartridges for Russian Army Rifle. W. Doering, Milton Jct., Wisc. 419

FOR SALE—Beautiful 9 mm. Haniel Mannlicher, A-No. 1, Condsporting Stock, set triggers, full ribbed barrel, a pre-war rifle, $60.00. Dr. N. D. Blackmer, Struthers, Ohio. 418

SELL—TRADE—Colt PPT .22 WRF in good condition except bluing somewhat worn, $13.00 or might trade on Remington .22 short auto if price and condition warrant. G. W. Courtney, 914 W. Jefferson St., Ft. Wayne, Ind. 416

HANDLOADERS AND GUNSMITHS ATTENTION. Prest-O-Lite lead pot ten pound capacity TEN Dollars; brazing and soldering outfit $7.60. "Perfection" reloading tools, $15.00. "ALBERTSON," Lewes, Delaware.

SELL OR TRADE—6 mm. Lee Straight Pull Sporting Rifle. Fancy Krag Sporter with 24-inch barrel, .44 Win. Carbine. Spec. set 20 ga. Krupp barrels built to fit 6 to 6¾ lb. 12 gauge Smith frame. V. J. De Barber, 811 First North St., Syracuse, N. Y. 393

FOR SALE OR TRADE—Genuine pre-war 9 mm. Luger, 4-inch barrel in first class condition. Want Springfield star-gauged service rifle or sporter in first class condition, or would consider Ross .280 or Newton .256, or any other good offer. Charles W. Taylor, East Bethany, N. Y. 373

TRADE—New .300 Savage, Bolt, extras, 7 x 50 Carl Zeiss binoculars, Comfort Sleeping Bag. WANT 20 ga. Winchester pump, '86 Winchester, .45 S.A. Colt, 7 mm. tools, components, molds or resizer and lubricator. Harold Peterson, 56 Central Ave., E. Providence, R. I. 421

FOR SALE—Winchester Model 94, cal .30, fancy sporting rifle, fancy walnut pistol grip stock and forearm checked, full magazine, 26-inch octagon barrel, take-down, gold bead front, checked trigger and buttplate, screw eyes for Winchester sling strap, gold plated trimmings. Perfect inside, like new outside; gun crank condition, money back if not satisfied. Cost $90.00, sell for $48.00 cash, no trades. Geo. Gorton, III, Cement, Oklahoma. 415

FOR SALE—.60 cal. cap and ball muzzle loading rifle in very good shape, $15.00. .44-77 Sharps Hammer Sporting, very good inside and out, $15.00. WANT—.45-120-550 Sharps Straight Solid Head shells; loaded or empty. Several obsolete black powder sporting cartridges. Ballard and Sharps Rifle Catalog. Winchester catalog previous to 1895. Ideal Hand Book previous to No. 21. E. B. Spalding, 1259 No. King's Road, Hollywood Calif. 399

WANTED—Old Gun Catalogues. Gun Books. FOR SALE—Bullet Molds .45, .70, .405, $1.50. .30 cal. 5 Ball, $2.50. About 16 ga. round, $1.00. Sharps 52 cal., $1.25. Percussion Caps $1.00 per 1,000. 600 U. S. No. 1 Smokeless Primers $1.00. Rifle Primers $2.00. 1,000 No. 1 Primers $2.00. Bullard Repeating Rifle .40 cal. Fine shape inside and out but little out of order $11.00. Another cal. .38-45 out of order, $8.00. Books: U. S. Army Regulations 1861 $1.00. U. S. Firing Manual 1913, 50 cents. History British N. R. A. 75 cents. Auction sale catalogues of Firearms and Cain's N. R. A. Reports. Cheap. Catalogues Marlin 1902-8-9, 75 cents each. Stephens 1912, 60 cents. Cartridges .44 Rim Fire for Henry Rifle, $2.50 per 100. Send Money Order. Fred Wainwright, Grayling, Michigan. 383

FOR SALE—One Colt Automatic .32, new, $20.00. One used at $15.00. One New Service Colt .45 Model 1917, $15.00. One, as issued Krag rifle, bore perfect, $12.50. One W. & C. Scott and Sons hammer shotgun No. 12, 30-in., 7½ lbs., perfect inside and out. Would cost new $160.00 without duty. Price $45.00. One National Match Springfield, stock cut down to sporter type, Lyman 48 sight and blocks for Winchester scope. Metal parts, sight, etc., to restore to as issued condition. Bore perfect and extremely accurate, $40.00. One B. S. A. No. 12 Match .22 with Winchester scope blocks. Used but makes possibles at any range, $30.00. One Winchester A-5 telescope extra fine cross hairs, $22.00 or with either of above rifles at $20.00. One 3-A Special Kodak 3¼ x 5½, Optimo shutter, lens anastigmat f. 6.3. List price $80.00, take $45.00. D. E. McConnell, Box 287, Gastonia, North Carolina. 395

WANTED—For Cash. J. P. Saur & Sons 9 mm. Rifle Barrel. State condition and price. L. Palmer, Gold Hill, Utah. 403

FOR SALE—500 cartridges, cal. 7.62, one 7.62 rifle, one .45-70 Springfield. WANT—A pump shotgun or a .22 target pistol. W. C. Burnett, Box 885, Corpus Christi, Texas. 411

FOR SALE—Krag Carbine, new barrel, gold bead sight, Russet leather sling strap, Lubaloy shells for $16.50. Chas. De Goller, Clayton, Wisconsin. 400

TRADE—.303 Ross Sporter, 26 inch barrel, recoil pad, 50 cartridges, for .45 Colt Auto., or .38 Special. Describe. Joseph Buchwald, Hartland, Maine. 417

TRADE—S. W. SS 10 inc .22 target pistol, Partridge sights, perfect inside, slight scratches in bluing outside, $20.00 or trade for Colt .45 Auto. T. L. Somers, Box 427, Mounds, Ill. 404

BELDING & MULL have good openings for instrument makers and tool makers. Permanent position to the right men. Philipsburg, Center Co., Pa. 405

FOR SALE—Colt .45 S. A. 7½ inch., blued new, $27.50. Army Special 5 inch, blued, new, $24.50. WANTED Police Positive Special .38, 4 inch barrel, in good condition. R. Lenny, 2811 W. Oxford St., Phila. Pa. 384

FOR SALE—One Ithaca 12 ga. No. 4 Double Barrel Shotgun, Lyman sights and Automatic Ejector, new and in perfect condition. Exceptionally smooth finish inside barrels. Cost $125.00. Will sell for $90.00. Cash. V. S. Thayer, Readsboro, Vermont. 422

FOR SALE—Match Springfield, as issued, like new, $35.00. Bolt .250-3000 Savage, new $35.00. .256 Newton with 48 Lyman, new $45.00. Newton Peep Sight, $5.00. 3-A (3¼ x 5½) Graflex has 4.5 Tessar lens, as new, $95.00. Owen Kintner, Wenatchee, Washington. 413

FOR SALE—We have several Ballard Schuetzen rifles ranging in price from $30.00 to $60.00. One B. S. A. .22 caliber rifle, fitted with Winchester telescope, $50.00. Write to us for specifications on Mauser and Mannlicher bolt action rifles, cal. 8 mm. John Meunier Gun Co., 272 W. Water St., Milwaukee, Wisc. 406

TRADE—Winchester 52, absolutely perfect inside and out. Winchester No. 5-A Telescope mounts and blocks. Like new. WANT—National Match grade Springfield, Lyman 48 sight and good loading outfit. Must be perfect. San Francisco or Oakland deal preferred, with privilege mutual inspections and trial. S. C. Williams, 5329 Manila Ave., Oakland, Cal. 412

FOR SALE—Peterson-Ballard double set trigger engraved action, 28 inch barrel, weight 12 pounds, .22 cal., test fired only, can furnish dime groups by Major Whelen with this rifle at 50 yards, $60.00. 800 Western open point Lubaloy bullets, 100 grains, .25 cal., $1.50 per hundred. R. Mosteller, Box 975, Columbus, Ga. 410

H. M. POPE has for sale NEW STANDARD AUTOMATIC RIFLES cal. 35 Remington Automatic. Used either as automatic or pump by turning gas valve. Price $25.00 each. Some of these have fine stocks, first come best choice, only a few left. I also have a fairly good stock of parts for repairs, everything new. Get them while they last. H. M. Pope, 18 Morris St., Jersey City, N. J. 401

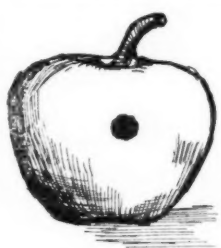
FOR SALE—30 auction sale catalogs priced. Catalog U. S. C. Co. Colection, Remington .50 cal. Army Pistol, R. & S., A. & W., Starr, Colt, Remington, .44 cal. perc. army revolvers. Other sizes above makes. United States Pistols: S. North 1816 Flint, Aston Perc. 1849, Johnson Flint 1837, 42, Johnson perc. 1854, Springfield 1855 perc., Waters 1837 Flint, J. J. Henry, Boulton, Flint. R. & L. pepperbox in case. Colts in cases. U. S. carbines, rifles, etc. J. C. Harvey, 872 Main St., Worcester, Mass. 414

WANTED FOR CASH—Any part, or all of list, must be in first class shape. Ship privilege examination C. O. D. B. & M. Mod. 24 handloading tool, Re and Decapper including resizing and expanding head, bullet puller, die and plunger bullet seater, for Squibb gas check bullet, also for service bullet, one nickel mold for 190 or 169 grain gas check bullet, Bond or Ideal lubricator and sizing die. 500 new cases, all above .30-'06 rimless. Bond or Ideal powder measure. Send description to Rifle, 1057 Byram St., Los Angeles, Cal. 409

One Champion Who Didn't Shoot US .22 N.R.A.'s

Many indeed are the laurels won by champions shooting US .22 N.R.A. long-rifle cartridges. DeLisle, the Olympic Small-Bore Champion; Dinwiddie, another outstanding star at the 1924 Olympic and International matches; Hession, Hilborn, Proudman and Russ, winners at Sea Girt this year; Schriver, Johnson, Lively and Van Sleen, winners at Camp Perry last year—all are .22 N.R.A. users. It is an indisputable fact that these straight-shooting .22's are the choice of champions.

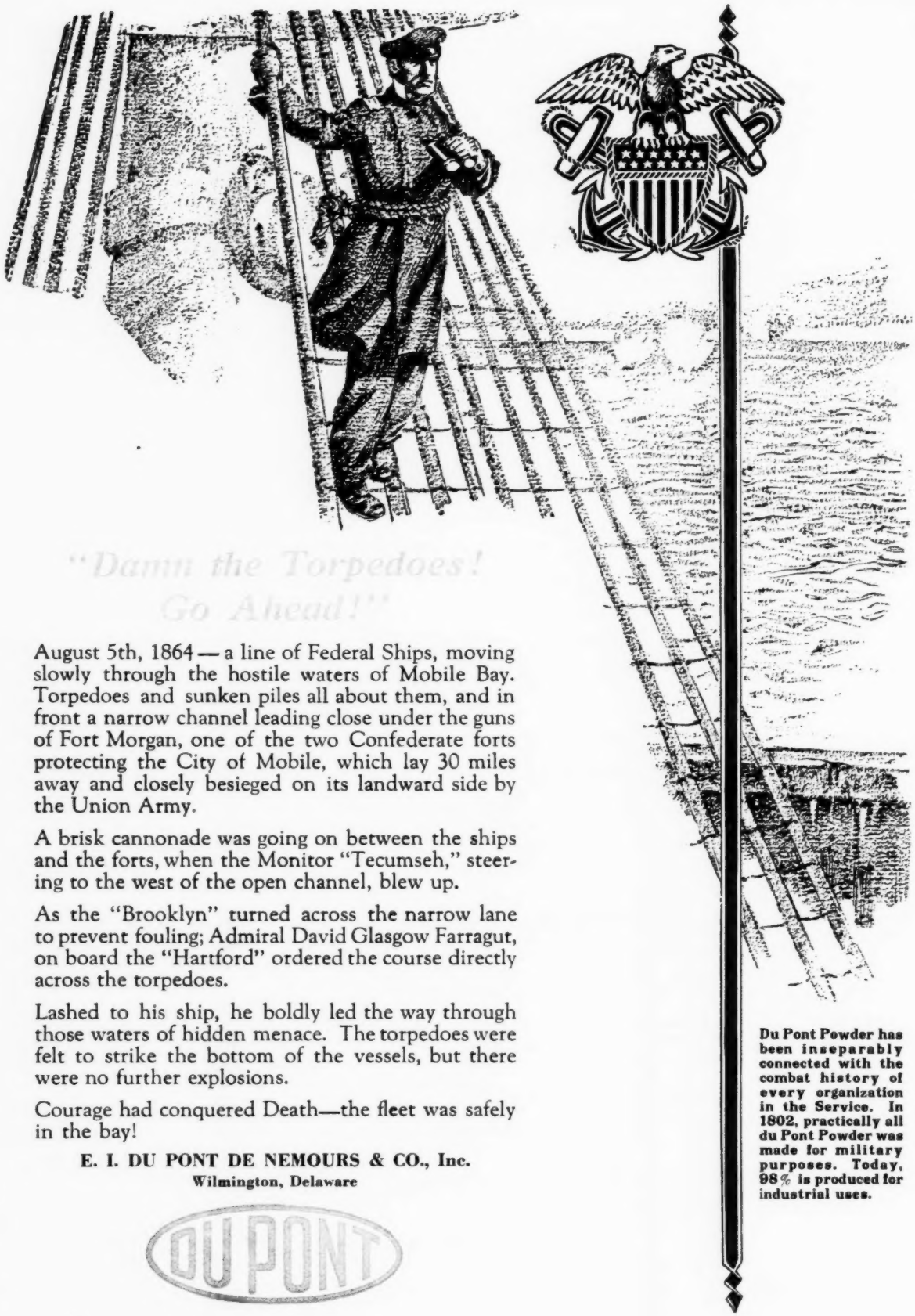
Popular as US .22 N.R.A.'s are, it must be admitted that there have been superb marksmen who have used other ammunition and have gone down into history. William Tell, for example. He helped to make the apple famous. But after all Mr. Tell's reputed performance is mere tradition—it is not official—possibly his bull's-eye was a "lot of applesauce".



"Possible" shot by W. Tell, winner of the storied "Swiss match."

UNITED STATES CARTRIDGE COMPANY

111 Broadway **New York, N. Y.**



"Damn the Torpedoes! Go Ahead!"

August 5th, 1864 — a line of Federal Ships, moving slowly through the hostile waters of Mobile Bay. Torpedoes and sunken piles all about them, and in front a narrow channel leading close under the guns of Fort Morgan, one of the two Confederate forts protecting the City of Mobile, which lay 30 miles away and closely besieged on its landward side by the Union Army.

A brisk cannonade was going on between the ships and the forts, when the Monitor "Tecumseh," steering to the west of the open channel, blew up.

As the "Brooklyn" turned across the narrow lane to prevent fouling; Admiral David Glasgow Farragut, on board the "Hartford" ordered the course directly across the torpedoes.

Lashed to his ship, he boldly led the way through those waters of hidden menace. The torpedoes were felt to strike the bottom of the vessels, but there were no further explosions.

Courage had conquered Death—the fleet was safely in the bay!

E. I. DU PONT DE NEMOURS & CO., Inc.
Wilmington, Delaware

DU PONT

Du Pont Powder has been inseparably connected with the combat history of every organization in the Service. In 1802, practically all du Pont Powder was made for military purposes. Today, 98% is produced for industrial uses.